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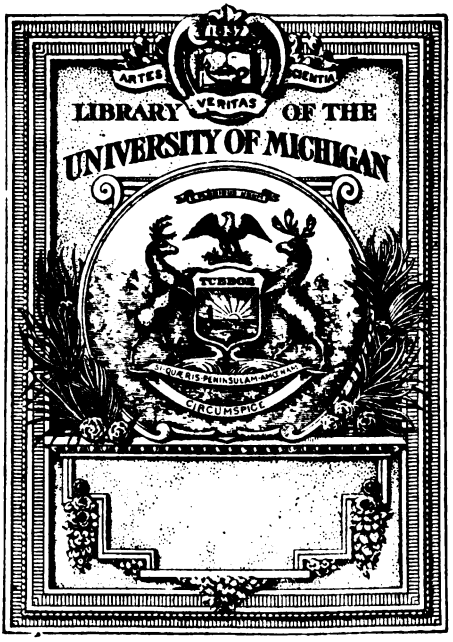
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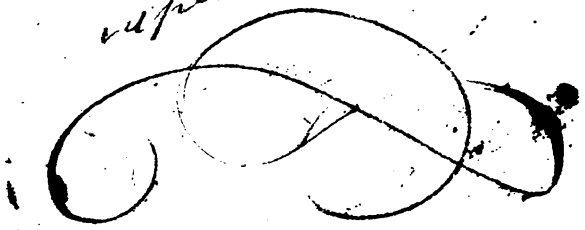
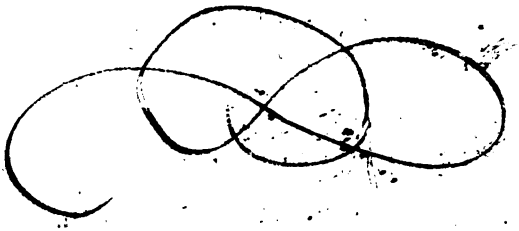
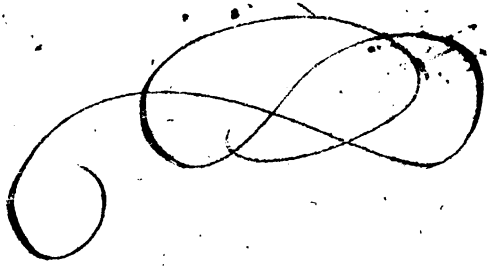
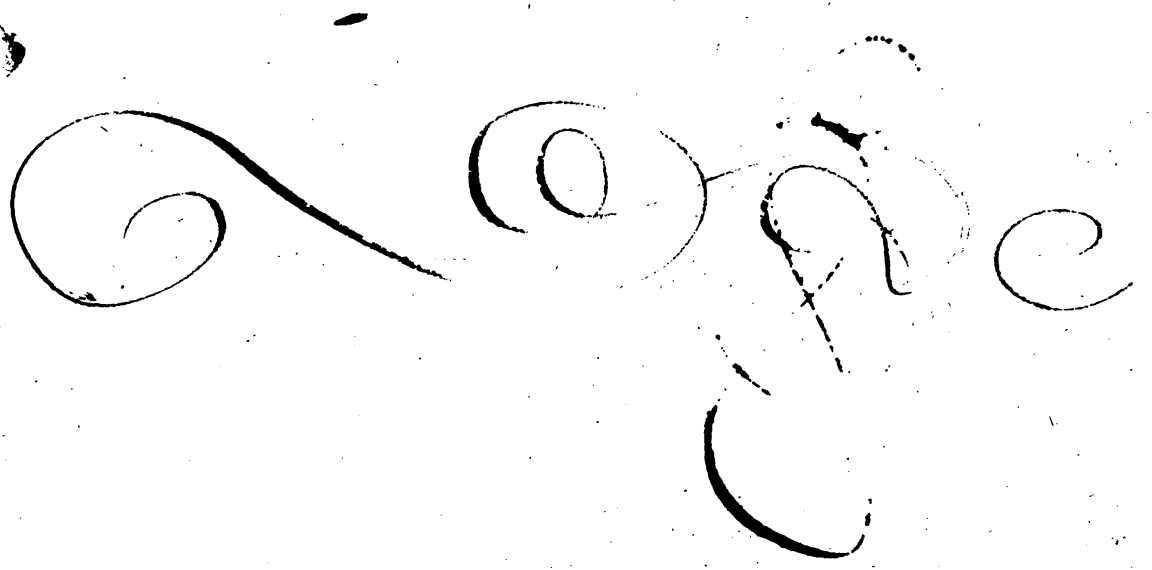








A MAP of the MOON

Fig. VI. Pag. 67.

a. Mare Hyperboreum
b. Paludes Hyperboreæ
c. Sinus Hyperboreus
d. Mare Eoum
e. Mare Mediterraneum

f. Pontus Euxinus
g. Palus Mœotis
h. Mare Caſpium
i. Mare Adriaticũ
k. Propontis

l. Regio Hyperborea.
m Sarmatia.
n. Taurica Cherſoneſus
o. Italia. p. Mœſia
q. Aſia Minor. r. Colchis

s. Sicilia
t. Peloponneſus
u. Scythia
w. Perſia. x. Arabia
y. Paleſtina. z Ægyptus
&. Libya. α. Inſ. Cercinna.

1. Mons Sinai. 2. M. Taurus. 3 M. Sepher. 4 M. Ætna. 5 M. Apenninus. 6 M. Olympus

This Scheme is the Face of the Moon as it appears through a Teleſcope at the Full, and as deſcribed by Hevelius; the Dark Parts are the Sea; the Bright Parts Land, and the long white Streaks, the Illuminated tops of Ridges of High Mountains.

The Spots here Deſcribed are for the main the same that are continually expos'd to our ſight, on Account of the exact adjuſtment of the Moons Diurnal and Menſtrual Revolutions, whereby almoſt the very same Face is continually turned towards our Earth.

I say nothing of the Librations diſcoverd in its Motions by Hevelius, which make the Parts ſometimes hidden to appear to us and thereby afford its Bordering Inhabitants (if such there be) the glorious view of our Earth, which the more remote Ones can never enjoy without Traveling a great way for so uncõmon a Proſpect.

That the Moon has an Atmoſphere about it we have lately diſcovered; but that Atmoſphere being very thin and only viſible in Total Eclipſes of the Sun, it was not neceſsary to repreſent it here.

I. Senex ſculp.

ASTRONOMICAL
Principles of Religion,
NATURAL and REVEALED.

In NINE Parts:

I. *Lemmata*; or the known Laws of Matter and Motion.
II. A particular *Account* of the Syſtem of the Univerſe.
III. The *Truth* of that Syſtem briefly Demonſtrated.
IV. Certain *Obſervations* drawn from that Syſtem.
V. Probable *Conjectures* of the Nature and Uſes of the ſeveral Celeſtial Bodies contained in the ſame Syſtem.
VI. Important Principles of NATURAL RELIGION Demonſtrated from the foregoing *Obſervations*.
VII. Important Principles of DIVINE REVELATION Confirm'd from the foregoing *Conjectures*.
VIII. Such Inferences ſhewn to be the common Voice of Nature and Reaſon, from the *Teſtimonies* of the moſt conſiderable Perſons in all Ages.
IX. A *Recapitulation* of the Whole: With a Large and Serious *Addreſs* to all, eſpecially to the *Scepticks* and *Unbelievers* of our Age.

Together with

A PREFACE,

Of the *Temper of Mind* neceſſary for the Diſcovery of *Divine Truth*; and of the *Degree of Evidence* that ought to be expected in *Divine Matters*.

By *WILLIAM WHISTON*, M. A.
Sometime Profeſſor of the Mathematicks in the Univerſity of CAMBRIDGE.

LONDON: Printed for J. SENEX at the *Globe* in *Salisbury-Court*, and W. TAYLOR at the *Ship* in *Pater-noſter-Row*, 1717.

To the Illuſtrious

Sir *Iſaac Newton*,

PRESIDENT,

And to the reſt of the

COUNCIL and MEMBERS

OF THE

ROYAL SOCIETY;

THESE

ASTRONOMICAL

Principles of Religion

NATURAL and REVEAL'D,

ARE

Moſt Humbly DEDICATED

BY

* *March* 25. 1717.

The AUTHOR.

ERRATA.

PAGE 15. Line 2. read *about* 45000. p. 16. l. 8. r. 200,000,000. p. 25. l. 13. r. 47". p. 50. l. 20. *Marg.* r. *Fig.* V. p. 135. l. 30, 31. r. *Mankind: For all this*, &c.
[Vid. Errat. reliq. in calce, p. 304.]

PREFACE.

BEFORE *I come to treat of this Noble Subject*, The Aſtronomical Syſtem of the Univerſe, *with its wonderful Conſequences, as it is now diſcovered to us by the good Providence of God, and the laborious Searches of this and the laſt Age; and chiefly, by the ſurprizing Sagacity and Penetration of the Illuſtrious Sir* Iſaac Newton; *I think it proper to premiſe* two Enquiries, *as of great Conſequence in way of Preparation to the receiving real Advantage by this Treatiſe; and without Satisfaction wherein, all ſuch Diſcourſes will be of little Effect with many of its Peruſers: I mean the Enquiry about that*

A Temper

2.2698

Temper of Mind, *which is neceſſary for the Diſcovery of Divine Truth; and the Enquiry into that* Degree of Evidence, *that ought to be expected in Divine Matters. For, if all our Knowledge be derived from God, and if it has pleaſed God to require a certain Degree of Probity, Serioufneſs, Impartiality, and Humility of Mind; together with hearty Prayers to him for his Direction, Bleſſing, and Aſſiſtance; and a proper Submiſſion to him, before he will communicate his Truths to Men; I mean, at leaſt, communicate the ſame ſo as ſhall make a due Impreſſion upon their Minds, and turn to their real Profit and Edification, to their true Improvement in Virtue and Happineſs: And if Men at any time come to the Examination either of the* Works *or* Word *of God, without that Temper of Mind, and without thoſe Addreſſes for his Aid, and Submiſſion to his Will, which He has determined ſhall be the Conditions of his Communications to them; eſpecially if they come with the contrary Diſpoſitions, with a Wicked, Partial, Proud, and Ludicrous Temper, and with an utter Diſregard to God, his Providence, Worſhip, and Revelation; all their Reſearches will come to nothing. If, I ſay, this be the Caſe, as to Divine Knowledge, as I believe it is, it cannot but be highly neceſſary for us all to conſider of this Matter beforehand, and to endeavour after the proper Qualifi-*

Qualifications, before we ſet our ſelves about the main Enquiries themſelves. If it has alſo pleaſed God to expect from us ſome more Deference and Regard for him, than for our poor fallible Fellow-Creatures here below; and to claim our Belief and Obedience, upon plain external Evidence, That certain Doctrines or Duties are derived from him, without our being always let into the Secrets of his Government, or acquainted with the Reaſons of his Conduct; and alſo to expect that this plain external Evidence be treated, as it is in all the other Caſes of Human Determinations and Judgments; I mean, that it be ſubmitted to, and acquieſced in, when it appears to be ſuch, as in all other Caſes would be allowed to be ſatisfactory, *and* plainly ſuperior *to what is alledged to the contrary: If, I ſay, this alſo be the Caſe as to Divine Knowledge, as I believe it is; It will be very proper for us all to conſider of this Matter before-hand alſo; that ſo we may not be afterward diſappointed, when in our future Progreſs we do not always find that* irreſiſtible *and* over-bearing *Degree of Evidence for certain Divine Truths, which in ſuch Caſes is not to be had; which in truth is almoſt peculiar to the Mathematicks; and the Expectation of which is ſo common, tho' unjuſt, a Pretence for Infidelity among us.*

As to the former of theſe Enquiries, or that Temper of Mind *which is neceſſary for the Diſcovery of Divine Truth; it can certainly be no other than what the Light of Nature, and the Conſciences of Men influenc'd thereby, dictate to us; thoſe, I mean, already intimated; ſuch as Serioufneſs, Integrity, Impartiality, and Prayer to God; with the faithful Belief, and ready Practice of ſuch Truths and Duties, as we do all along diſcover to be the Word and Will of God; together with ſuch a Modeſty, or Reſignation of Mind, as will reſt ſatisfy'd in certain ſublime Points, clearly above our Determination, with full Evidence that they are revealed by God, without always inſiſting, upon knowing the Reaſons of the Divine Conduct therein immediately, before we will believe that Evidence. Theſe are ſuch Things as all honeſt and ſober Men, who have naturally a Senſe of Virtue and of God, in their Minds, muſt own their Obligation to. We all know, by the common Light of Nature, till we eclipſe or corrupt it by our own Wickedneſs, That we are to deal with the utmoſt Fairneſs, Honeſty, and Integrity in all, eſpecially in Religious Matters; that we are to hearken to every Argument, and to conſider every Teſtimony without Prejudice, or Byas, and ever to pronounce agreeably to our Convictions; that we are but Weak, Frail, Dependent*

dent Creatures, all whoſe Faculties, and the Exerciſe of them, are deriv'd from God; that we ought therefore to exerciſe a due Modeſty, and practiſe a due Submiſſion of Mind in Divine Matters, particularly in the Search after the Nature, and Laws, and Providence of our great Creator: A Submiſſion, I mean, not to Human, but to Divine Authority, when once it ſhall be authentickly made known to us: That the humble Addreſſing of our ſelves to God for his Aid, Direction, and Bleſſing on our Studies and Enquiries, is one plain Inſtance of ſuch our Submiſſion to Him; and that a ready Compliance with Divine Revelation, and a ready Obedience to the Divine Will, ſo far as we have clearly diſcover'd it, is another neceſſary Inſtance of the ſame humble Regard to the Divine Majeſty. Nor indeed, can any one who comes to theſe Sacred Enquiries with the oppoſite Diſpoſitions, of Diſhoneſty, Partiality, Pride, Buffoonry, Neglect of all Divine Worſhip, and Contempt of all Divine Revelation, and of all Divine Laws, expect, even by the Light of Nature, that God ſhould be oblig'd to diſcover farther Divine Truths to him. Nor will a ſober Perſon, duly ſenſible of the different States of Creator and Creature, imitate Simon Magus, *and his Followers, in the firſt Ages of the Goſpel; and ſet up ſome Metaphyſical Subtilties, or Captious Queſtions,*

about the Conduct of Providence, as ſufficient to ſet aſide the Evidence of confeſſed Miracles themſelves; but will rather agree to that wiſe Aphoriſm laid down in the Law of Moſes, *and ſuppos'd all over the Bible; That*

Deu. xxix. 29. Secret Things belong unto the Lord; but Things that are revealed, to Us and to our Children, that we may do them.

Now in order to the making ſome Impreſſions upon Men in this Matter, and the convincing them, that All our Diſcoveries are to be derived from God; and that we are not to expect his Bleſſing upon our Enquiries, without the foregoing Qualifications, Devotions, and Obedience; Give me leave here, inſtead of my own farther Reaſoning, to ſet down from the Ancient Jewiſh *and* Chriſtian *Writers, ſeveral Paſſages which ſeem to me very remarkable, and very pertinent to our preſent Purpoſe: Not now indeed, as ſuppoſing any of theſe Obſervations of Sacred Authority, but as very right in themſelves; very agreeable to the Light of Nature; and very good Teſtimonies of the Senſe of wiſe Men in the ſeveral ancient Ages of the World to this Purpoſe. And I chuſe to do this the more largely here, becauſe I think this Matter to be of very great Importance; becauſe it ſeems to be now very little known or conſider'd, at leaſt very little practis'd, by ſeveral pretended Enquirers into Reveal'd Religion; and be-*

cauſe

cauſe the Neglect hereof ſeems to me a main Occaſion of the Scepticiſm and Infidelity of this Age.

The Lord ſpake unto *Moſes*, ſaying; See, I have called by Name *Bezaleel*, the Son of *Uri*, the Son of *Hur*, of the Tribe of *Judah*: And I have filled him with the Spirit of God, in Wiſdom, and in Underſtanding, and in Knowledge, *&c.* And in the Hearts of all that are wiſe-hearted, I have put Wiſdom, *&c.* Ex. xxxi. 1, 2, 3, 6.

It ſhall come to paſs, if thou wilt not hearken unto the Voice of the Lord thy God, to obſerve to do all his Commandments, and his Statutes, which I command thee this Day, that all theſe Curſes ſhall come upon thee, and overtake thee: ——The Lord ſhall ſmite thee with Madneſs, and Blindneſs, and Aſtoniſhment of Heart; and thou ſhalt grope at Noon-day, as the Blind gropeth in Darkneſs. Deut. xxviii. 15. v. 28, 29.

The Lord hath not given you an Heart to perceive, and Eyes to ſee, and Ears to hear, unto this Day. xxix. 4.

Give thy Servant an Underſtanding Heart, to judge thy People; that I may diſcern between Good and Bad: For who is able to judge this thy ſo great a People? And the Speech pleaſed the Lord, 1 King. iii. 9, 10, 11, 12.

that *Solomon* had asked this Thing. And God ſaid unto him, becauſe thou haſt asked this Thing; ——Haſt asked for thy ſelf Underſtanding to diſcern Judgment; behold I have done according to thy Words: Lo, I have given thee a Wiſe and an Underſtanding Heart; ſo that there was none like thee before thee; neither after thee ſhall any ariſe like unto
v. 28. thee. ——And all *Iſrael* heard of the Judgment which the King had judged; and they feared the King; for they ſaw that the Wiſdom of God was in him, to do Judgment.

Job xxxii. 7, 8. I ſaid, Days ſhould ſpeak; and Multitude of Years ſhould teach Wiſdom: But there is a Spirit in Man; and the Inſpiration of the Almighty giveth them Underſtanding.

xxxiii. 12, 13. Behold in this thou art not juſt; I will anſwer thee, that God is greater than Man. Why doſt thou ſtrive againſt him? For he giveth not Account of any of his Matters.

xxxiv. 31, 32. Surely it is meet to be ſaid unto God, I have born Chaſtiſement; I will not offend any more: That which I ſee not, teach thou me; if I have done Iniquity, I will do no more.

xxxvii. 5. God thundreth marvellouſly with his Voice: Great Things doth he which we cannot comprehend. With

With God is terrible Majeſty: Touching the Almighty we cannot find him out: He is excellent in Power, and in Judgment, and in Plenty of Juſtice: He will not afflict. Men do therefore fear him: He reſpecteth not any that are wiſe of Heart. v. 22, 23, 24.

Who hath put Wiſdom in the inward Parts? Or who hath given Underſtanding unto the Heart? xxxviii. 36.

Then *Job* anſwered the Lord and ſaid; I know that thou canſt do every Thing, and that no Thought can be with-holden from thee. Who is he that hideth Counſel without Knowledge? Therefore have I uttered that I underſtood not; Things too wonderful for me, which I knew not. xlii. 1, 2, 3.

—I have heard of thee by the Hearing of the Ear, but now mine Eye ſeeth thee: Wherefore I abhor my ſelf, and repent in Duſt and Aſhes. v. 5, 6.

The Meek will he guide in Judgment: The Meek will he teach his Way. Pſal. xxv. 9.

The Secret of the Lord is with them that fear him; and he will ſhew them his Covenant. v. 14.

Thou through thy Commandments haſt made me wiſer than mine Enemies; for they are ever with me. I have more Underſtanding than all my Teachers, for thy Teſtimonies are my Meditation. I cxix. 98, 99, 100.

under-

understand more than the Ancients, be-
v. 104. cauſe I keep thy Precepts. ——Through thy Precepts I get Underſtanding; therefore I hate every falſe way.

cxxxi. 1. Lord, my Heart is not haughty, nor mine Eyes lofty; neither do I exerciſe my ſelf in great Matters, or in Things too high for me.

Prov. ii. 6. The Lord giveth Wiſdom: Out of his Mouth cometh Knowledge and Underſtanding.

iii. 5, 6. Truſt in the Lord with all thine Heart, and lean not to thine own Underſtanding. In all thy ways acknowledge him, and he ſhall direct thy Paths.

v. 32. The Froward is Abomination to the Lord: But his Secret is with the Righteous.

Eccleſ. ii. 26. God giveth to a Man that is good in his Sight, Wiſdom, and Knowledge, and Joy.

iii. 11. God hath made every Thing Beautiful in his Time: Alſo he hath ſet the World in their Heart; ſo that no Man can find out the Work that God maketh, from the Beginning to the End.

viii. 17. Then I beheld all the Work of God, that a Man cannot find out the Work that is done under the Sun; becauſe though a Man labour to ſeek it out, yet he ſhall not find it: Yea further, though a wiſe Man

Man think to know it, yet ſhall he not be able to find it.

As for theſe Four Children, God gave them Knowledge and Skill in all Learning and Wiſdom. Dan. i. 17.

None of the Wicked ſhall underſtand, but the Wiſe ſhall underſtand. xii. 10.

Who is wiſe, and he ſhall underſtand theſe Things; prudent, and he ſhall know them: For the ways of the Lord are right, and the Juſt ſhall walk in them; but the Tranſgreſſors ſhall fall therein. Hoſ. xiv. 9.

And the Angel that was ſent unto me, whoſe Name was *Uriel*, gave me an Anſwer, and ſaid, Thy Heart hath gone too far in this World: And thinkeſt thou to comprehend the Way of the moſt High? 2 Eſd. iv. 1, 2.

He ſaid moreover unto me; Thine own Things, and ſuch as are grown up with thee, canſt thou not know; how ſhould thy Veſſel then be able to comprehend the way of the Higheſt? v. 10, 11.

They that dwell upon the Earth may underſtand nothing; but that which is upon the Earth: And he that dwelleth above the Heavens, may only underſtand the Things that are above the heighth of the Heavens, *&c.* v. 21.

Into

Wiſd. i. 41, &c. Into a malicious Soul Wiſdom ſhall not enter, nor dwell in the Body that is ſubject unto Sin, &c.

ii. 21. Their own Wickedneſs hath blinded them.

v. 22. As for the Myſteries of God, they know them not.

vii. 7. Wherefore I prayed, and Underſtanding was given me: I called upon God, and the Spirit of Wiſdom came to me.

v. 15, 16. It is God that leadeth unto Wiſdom, and directeth the Wiſe. For in his Hand are both we and our Words; all Wiſdom alſo, and Knowledge of Workmanſhip.

viii. 21. When I perceived that I could not otherwiſe obtain Wiſdom, except God gave her me; (and that was a point of Wiſdom alſo, to know whoſe Gift ſhe was,) I prayed unto the Lord, and beſought him, and with my whole Heart I ſaid:

ix. 4, 5, 6. Give me Wiſdom that ſitteth by thy Throne, and reject me not from among thy Children. For I thy Servant, and Son of thine Handmaid, am a feeble Perſon, and of a ſhort Time, and too young for the Underſtanding of Judgment and Laws. For though a Man be never ſo perfect among the Children of Men, yet

yet if thy Wiſdom be not with him, he ſhall be nothing regarded.

Hardly do we gueſs aright at Things that are upon Earth; and with Labour do we find the Things that are before us: But the Things that are in Heaven who hath ſearched out? v. 16.

All Wiſdom cometh from the Lord, and is with him for ever. ——She is with all Fleſh according to his Gift; and he hath given her to them that love him. Eccluſ. i. 1. v. 10.

If thou deſire Wiſdom, keep the Commandments, and the Lord ſhall give her unto thee. For the Fear of the Lord is Wiſdom, and Inſtruction; and Faith and Meekneſs are his Delight. v. 26, 27.

Myſteries are revealed unto the Meek ——Seek not out the Things that are too hard for thee; neither ſearch the Things that are above thy Strength. But what is commanded thee think thereupon with Reverence: For it is not needful for thee to ſee the Things that are in Secret. iii. 19, 21, 22.

Let thy Mind be upon the Ordinances of the Lord, and meditate continually in his Commandments. He ſhall eſtabliſh thine Heart, and give thee Wiſdom at thine own Deſire. vi. 37.

Wiſdom, Knowledge, and Underſtanding of the Law, are of the Lord. Love, xi. 15, 16.

and

and the way of good Works, are from him. Error and Darkneſs had their Beginning together with Sinners.

xv. 7, 8. Fooliſh Men ſhall not attain unto Wiſdom; and Sinners ſhall not ſee her. For ſhe is far from Pride; and Men that are Lyars cannot remember her.

xxi. 11. He that keepeth the Law of the Lord getteth the Underſtanding thereof; and the Perfection of the Fear of the Lord is Wiſdom.

xxxix. 24. As his Ways are plain unto the Holy, ſo are they Stumbling-blocks unto the Wicked.

xliii. 33. The Lord hath made all Things, and to the Godly hath he given Wiſdom.

John vii. 17. If any Man will do his Will, he ſhall know of the Doctrine whether it be of God, or whether I ſpeak of my ſelf.

Rom. xi. 33. O the Depth of the Riches both of the Wiſdom and Knowledge of God! How unſearchable are his Judgments, and his Ways paſt finding out.

Jam. i. 5. If any of you lack Wiſdom, let him ask of God, that giveth to all Men liberally, and upbraideth not, and it ſhall

v. 17. be given him. ——Every good Gift, and every perfect Gift, is from Above, and cometh down from the Father of Lights.

If

If I once know that he is a Man of Probity, and unblamable in thoſe Points of Duty wherein there can be no doubt but they are good; that is, if he be ſober, if he be merciful, if he be juſt, if he be meek and humane; which no one can doubt to be virtuous and good Things; then it will, in all Probability, be reaſonable to expect that to him that hath theſe excellent Virtues, that which is wanting to his Faith and Knowledge will be conferr'd; and that wherein his Life, which is ſo commendable in the reſt, ſhall ſtill appear blamable, it may be amended. But if he be involved and polluted in Sins, thoſe I mean which are notoriouſly ſuch; I muſt not then declare plainly to him the leaſt Part of the conceal'd recondite Branches of Divine Knowledge: But rather, with great Boldneſs, deal with him that he muſt leave off his Sins, and amend his vicious Actions. *Recog.* ii. 4.

Whence 'tis very plain, that ſome do oppoſe the Truth of the Religion of God, not becauſe the Foundation of Faith does not ſeem to them certain; but becauſe they are either involv'd in a Superabundance of Sins, or prepoſſeſs'd by their wicked Habits, or puff'd up by the Pride of their Heart; ſo that they do not believe §. 16.

lieve even thoſe Things which they think they ſee with their own Eyes.

§. 17. But now, becauſe an innate Affection towards God our Creator, might ſeem ſufficient for the Salvation of thoſe that lov'd him, the Enemy ſtudies to pervert the Affection of Men, and to render them Enemies and Ungrateful to their Creator, *&c.*

§ 18. We not only do enjoy God's Benefits, but by his Aid and Power it was that we came into Being, when we were not: whom alſo, if we pleaſe, we ſhall obtain from him, as our Reward, to be for ever in Happineſs. To the End therefore, that Unbelievers may be diſtinguiſh'd from Believers, and the Pious from the Impious; the Evil one has Permiſſion to make Uſe of theſe Arts, whereby every ones Affections towards their proper Parent may be tried, *&c.*

§. 19. Here therefore, that is while we continue in this preſent Life, where is the Place of Action, you ought to acknowledge the Will of God. For if any one has a mind to enquire after Things that cannot be found out, before he amends his Life, ſuch an Enquiry is fooliſh, and will be to no Purpoſe. For Time is ſhort; and the Judgment of God will be appointed on Account of Mens Actions, and not their Queſtions.

Queſtions. And therefore let us firſt of all make Enquiry what we are to Do, and after what manner it is to be done; that we may be thought worthy of Eternal Life. For if we ſpend this ſhort Time of Life in idle and unprofitable Queſtions, we ſhall certainly go to God empty, and deſtitute of good Works; at that Time, I mean, when the Judgment ſhall be appointed for our Works; for every Thing has its proper Time and Place. This is the Place, this the Time for Works: The World to come for Retribution. Leſt therefore we ſhould change the Order of Time and Place, and thereby be our own Hindrance; let our firſt Enquiry be what is *God's Righteouſneſs*; that like thoſe that are going a Journey, we may have a plentiful Proviſion for our Journey, that is, good Works; that ſo we may be able to arrive at the Kingdom of God, as at a very great City. For to thoſe who are well diſpos'd, God is manifeſted by thoſe Works of Nature which he has made, and is atteſted to by his own Creatures. Since therefore there ought to be no doubt concerning the Exiſtence of God, we are only to enquire about his Righteouſneſs, and his Kingdom. But if our Minds have an Inclination to put us on the Enquiry about ſecret and hidden Things, before we §. 20.

enquire after the Works of Righteouſneſs, we ought to give an Account to our ſelves of this Procedure: For if we live well, and are thought worthy to obtain Salvation, we ſhall go to God Chaſt and Pure, and be fill'd with the Holy Ghoſt; and ſhall know all ſuch ſecret and hidden Things, without any Cavilling or Queſtion; which at preſent, though any one ſhould ſpend the entire Time of his Life in the Enquiry, he will be ſo far from finding them out, that he will bring himſelf into greater Errors; becauſe he aims to arrive at the Haven of Life, without walking the way of Life.

iii. 19. Do but conſider that Silence and Quietneſs with which all the People ſtand; and how, as you ſee, they are very Patient, and pay a great Honour to the Truths of God, even before they are inſtructed in them. For as to any greater Honour they have not yet learned that 'tis their Duty to pay it. For which Reaſon I have Hope, in the Mercy of God, that he will receive kindly this Religious Diſpoſition of their Minds towards him; will afford the Reward of Victory to him that preaches the Truth; and will make manifeſt to them which of us is the Preacher of the Truth.

There-

Therefore is it neceſſary for Men to enquire whether they have it in their Power by ſeeking to find what is good; and when they have found it, to do it. For this is that for which they muſt be judg'd. As for what is beyond this, no one but a Prophet needs to know it: And with good Reaſon. For to what Purpoſe is it for Men to know after what Manner the World was made? Which yet would be neceſſary for us to know, if we were to undertake ſo artful a Piece of Work our ſelves. But now it is ſufficient for us, and for our Worſhipping God, to know that he made the World: But after what Manner he made it, we are not to enquire; becauſe, as I ſaid, 'tis not our Buſineſs to learn the Knowledge of that Art, as if we were to make ſomewhat like it. Nor are we to be called to Account for this, Why we did not learn after what Manner the World was made? But only for this, That we are ignorant of its Creator. But we ſhall know that God, the Creator of the World, is both Juſt and Good, if we ſeek after him in the Paths of Righteouſneſs. §. 37.

God, who is the One and True God, reſolv'd to prepare good and faithful Friends for his firſt-begotten Off-ſpring: But knowing they could not be Good, unleſs they had in their own Power that §. 52.

Senſe of the Things whereby they might become good; that they might be what they deſired to be by their own Choice; and that otherwiſe they could not be really Good, if they were not ſuch by Choice, but were forced to be ſuch by a Neceſſity of Nature, he gave every one the free Power of his own Will; that he might be able to be ſuch an one as he deſired to be, *&c.*

See alſo ix. §. 4, 5, 6, 8.

§. 58. As God has plac'd the Compaſs of Heaven above the Mountains, and the Earth, ſo has he covered the Truth with the Vail of his Charity; that he only might attain to it, who would firſt knock at the Gate of the Divine Love.

See iv. §. 4, 5. viii. §. 52, 53, 56, 58, 59.

viii. 61, 62. Men are not able to arrive at any certain Concluſion of Science and Knowledge by ſuch Diſputations; and they find their Lives to be at an End before their Queſtions are ſo. When therefore all Things appear to be uncertain as to theſe Points, we muſt have our Recourſe to the *True Prophet*, whom God the Father would have beloved by all: And in order thereto he would entirely put an End to theſe Inventions of Men, wherein there was no certain Knowledge to be found, that ſo he

he might be the more enquir'd for, and might open that way of Truth to Men, which thoſe others had ſhut from them. For his Sake God did alſo make the World; and by him the World is ſettled: Whence it is that he is every-where preſent to thoſe that ſeek him after a Pure, and Holy, and Faithful Manner.

See this Matter further Proſecuted in my Chronology, p. 3—7.

Now from all this Evidence, and much more that might be alledg'd, it is apparent that the Jewiſh *and* Chriſtian *Religions always ſuppoſe that there muſt be a due Temper of Mind in the Enquirers, or elſe the Arguments for thoſe Religions will not have their due Effect. That the Courſe of God's Providence deſigns hereby to diſtinguiſh between the well-diſpos'd, the Meek, the Humble, and the Pious; which are thoſe whom the common Light of Nature declares may expect the Divine Bleſſing on their Studies of this ſort; and the Ill-diſpos'd, the Obſtinate, the Proud, and the Impious; which are thoſe whom the ſame common Light of Nature aſſures us may expect the Divine Malediction on the ſame: And that 'tis not for want of convincing and ſatisfactory Evidence in the Buſineſs of Revelation, but becauſe many Men come with Perverſe, Sceptical,*

and wicked Diſpoſitions, that they fail of Satisfaction therein. Accordingly, I think it is true in common Obſervation, That the Virtuous and the Religious, I mean thoſe that are ſuch according to Natural Conſcience, do rarely, if ever, fail on their Enquiries to Embrace and Acquieſce in both the Jewiſh *and* Chriſtian *Revelations; and that the Debauch'd and Prophane do as ſeldom fail on their Enquiries to Reject and Ridicule them. Which different Succeſs of the ſame Examination, agrees exactly with the whole Tenor of the Scriptures; and is the very ſame which muſt be true, in caſe thoſe Scriptures be true alſo; and is, by Conſequence, a conſiderable Confirmation of their real Verity and Inſpiration. And certainly, he that conſiders his own Weakneſs and Dependance on God, and that all Truth and Evidence muſt come originally from him, will by Natural Judgment and Equity pronounce, that he who expects the Divine Bleſſing and Illumination, in Points of ſuch vaſt Conſequence, as thoſe of Revelation moſt certainly are, ought above all Things to purify his Will, and rectify his Conduct in ſuch Points as all the World knows to be the Will of God; and to Addreſs himſelf to the Divine Majeſty with due Fervency and Seriouſneſs, for his Aid and Aſſiſtance, before he can juſtly promiſe himſelf Succeſs in ſo great and momentous an Undertaking.*

But

But then, as to the Second Enquiry, *or the* Degree of Evidence *that ought to be expected in Religious Matters, it ſeems to me very neceſſary to ſay ſomewhat upon this Subject alſo, before we come to our main Deſign. For as on the one Side it is a great Error in all Caſes to expect ſuch Evidence as the Nature of the Subject renders impoſſible; ſo is it as weak on the other Side, to lay the Streſs of important Truths on ſuch Evidence, as is in its own Nature Unſatisfactory and Precarious; or to aſſert with great Aſſurance what can no way be Proved, even by that ſort of Evidence which is proper for the Subject in Debate. An Inſtance of the firſt Sort we have in* Autolicus, *an Heathen, in his Debates with* Theophilus *of* Antioch; *who appears weakly to have inſiſted upon* Seeing *the God of the Chriſtians, e'er he would believe his Exiſtence: While one of the known Attributes of that God is, that he is* Inviſible. *And almoſt equally prepoſterous would any Philoſophick Sceptick now be, who ſhould require the* Sight *of the Air in which we Breathe, before he would believe that there was ſuch an Element at all. Whereas it is clear, that the Air may be demonſtrated to be ſufficiently ſenſible and real, by a Thouſand Experiments; while yet none of thoſe Experiments can render it* Viſible *to us: Juſt as the Exiſtence of a Supreme Being may be*

Theoph. ad Autolyc. L. I. in initio.

demonſtrated by innumerable Arguments, although none of thoſe Arguments imply even the Poſſibility of his being properly Seen *by any of his Creatures. But then, that we may keep a Mean here, and may neither on one Side, expect in our Religious Enquiries,* overbearing, *or ſtrictly* Mathematick Evidence, *ſuch as is impoſſible to be deny'd or doubted of by any; which would render the conſtant Deſign of Providence, already ſtated, entirely ineffectual, and* force *both Good and Bad to be Believers, without all Regard to their Qualifications and Temper of Mind: Nor on the other Side, may depend on ſuch weak and precarious Arguments, as are not really ſufficient nor ſatisfactory to even Fair, Honeſt, and Impartial Men: I intend here to Conſider, what that Degree of Evidence is, which ought to be here inſiſted on; without which we are not, and with which we are obliged to acquieſce in Divine Matters. Now this Degree of Evidence I take to be that, and no other, which upright Judges are determin'd by in all the important Affairs of Eſtate and Life that come before them: And according to which, they ever aim to give Sentence in their Courts of Judicature. I chuſe to Inſtance in this Judicial Evidence, and theſe Judicial Determinations eſpecially, becauſe the Perſons concern'd in ſuch Matters are, by long Uſe, and the Nature of their Employ-*

Employment, generally ſpeaking, the beſt and moſt ſagacious Diſcoverers of Truth, and thoſe that judge the moſt unbiaſs'dly and fairly, concerning ſufficient or inſufficient Evidence of all others. Such upright Judges then, never expect ſtrictly Undeniable, or Mathematick Evidence; which they know is, in Human Affairs, abſolutely impoſſible to be had: They don't require that the Witneſſes they Examine, ſhould be Infallible, or Impeccable, which they are ſenſible would be alike Wild and Ridiculous: Yet do they expect full, ſufficient, or convincing Evidence; and ſuch as is plainly Superior to what is alledged on the other Side: And they require that the Witneſſes they believe, be, ſo far as they are able to diſcover, of a good Character, Upright and Faithful. Nor do they think it too much Trouble to uſe their utmoſt Skill and Sagacity in diſcovering where the Truth lies; how far the Witneſſes agree with, or contradict each other; and which way the ſeveral Circumſtances may be beſt compar'd, ſo as to find out any Forgery, or detect any Knavery which may be ſuſpected in any Branches of the Evidence before them. They do not themſelves pretend to judge of the Reality or Obligation of any Ancient Laws, or Acts of Parliament, from their own meer Gueſſes or Inclinations, but from the Authentickneſs of the Records which contain them; and though

they

they are not able always to ſee the Reaſon, or Occaſion, or Wiſdom of ſuch Laws, or Acts of Parliament; yet do they, upon full External Evidence that they are Genuine, allow and execute the ſame: As conſidering themſelves to be not Legiſlators, but Judges: And owning that Ancient Laws, and Ancient Facts, are to be known not by Gueſſes or Suppoſals, but by the Production of Ancient Records, and Original Evidence for their Reality. Nor in ſuch their Procedure do they think themſelves guilty in their Sentences, if at any Time afterwards they diſcover that they have been impos'd upon by falſe Witneſſes, or forged Records; ſuppoſing, I mean, that they are conſcious that they did their utmoſt to diſcover the Truth, and went exactly by the beſt Evidence that lay before them; as knowing they have done their Duty, and muſt in ſuch a Caſe be Blameleſs before God and Man, notwithſtanding the Miſtake in the Sentences themſelves. Now this is that Procedure which I would earneſtly recommend to thoſe that have a Mind to enquire to good Purpoſe into Reveal'd Religion. That after they have taken Care to purge themſelves from all thoſe Vices, which will make it their great Intereſt that Religion ſhould be falſe; after they have reſolv'd upon Honeſty, Impartiality, and Modeſty, which are Virtues by the Law of Nature; after they have devoutly implor'd the

Divine Aſſiſtance and Bleſſing on this their important Undertaking; which is a Duty likewiſe they are obliged to by the ſame Law of Nature; that after all this Preparation, I ſay, they will ſet about the Enquiry it ſelf, in the very ſame Manner that has been already deſcrib'd, and that all our upright Judges proceed by in the Diſcovery of Truth. Let them ſpare for no Pains, but conſult all the Originals, whenever they can come at them: And let them uſe all that Diligence, Sagacity, and Judgment, which they are Maſters of, in order to ſee what real External Evidence there is for the Truth of the Facts on which the Jewiſh *and* Chriſtian *Religions do depend. I here ſpeak of the* Truth of Facts, *as the ſureſt way to determine us in this Enquiry; becauſe all the World, I think, owns that if theſe Facts be true, theſe Inſtitutions of Religion muſt alſo be true, or be deriv'd from God; and that no particular Difficulties, as to the Reaſons of ſeveral Laws, or the Conduct of Providence in ſeveral Caſes, which thoſe Inſtitutions no where pretend to give us a full Account of, can be ſufficient to ſet aſide the convincing Evidence which the Truth of ſuch Facts brings along with it. For Example: Thoſe who are well ſatisfy'd of the Truth of the* Moſaick *Hiſtory of the Ten miraculous Plagues with which the God of* Iſrael *ſmote the* Egyptians; *of the*

the drowning of the Egyptians *in the* Red-Sea; *while the* Iſraelites *were miraculouſly conducted through the ſame; and of the amazing manner wherein the Decalogue was given by God to that People at Mount* Sinai; *will, for certain, believe that the* Jewiſh *Religion was in the main derived from God, though he ſhould find ſeveral occaſional Paſſages in the* Jewiſh *Sacred Books, which he could not Account for, and ſeveral ritual Laws given that Nation, which he could not gueſs at the Reaſons why they were given them. And the Caſe is the very ſame as to the Miraculous Reſurrection, and Glorious Aſcenſion of our Bleſſed Saviour,* Jeſus Chriſt, *with Regard to the* New Teſtament. *On which Account I reckon that the Truth of ſuch Facts is to be principally enquired into, when we have a mind to ſatisfy our ſelves in the Verity of the* Jewiſh *and* Chriſtian Religions. *And if it be alledg'd that ſome of theſe Facts are too remote to afford us any certain Means of Diſcovery at this Diſtance of Time; I Anſwer, That then we are to ſelect ſuch of thoſe Facts as we can examine, and to ſearch into the Acknowledgment or Denial of thoſe that are Ancienter, in the oldeſt Teſtimonies now Extant; into the Effects and Conſequences, and ſtanding Memorials of ſuch Facts in After-Ages, and how far they were real, and allow'd to be ſo; and in ſhort, we are to deter-*

determine concerning them, by the beſt Evidence we can now have; and not let a bare Suſpicion, or a Wiſh that Things had been otherwiſe, overbalance our real Evidence of Facts in any Caſe whatſoever. I do not mean that our Enquirer is to have no Regard to Internal Characters, *or the* Contents *of the* Jewiſh *and* Chriſtian *Revelations; or that he is not to examine into that alſo in the General, before he admits even the Proof from Miracles themſelves; becauſe what pretended Miracles ſoever are wrought, for the Support of Idolatry, or Wickedneſs; for the Eſtabliſhment of Notions contrary to the Divine Attributes, or of an Immortal, or Prophane, or Cruel Religion, though they may prove ſuch a Religion to be Supernatural, yet will they only prove that it comes from wicked Dæmons, or Evil Spirits, and not from a God of Purity and Holineſs, and ſo will by no means prove it Divine, or worthy of our Reception. But then, it is, for the main, ſo well known, that the* Jewiſh *and* Chriſtian *Inſtitutions do agree to the Divine Attributes, and do tend to Purity, Holineſs, Juſtice, and Charity; and are oppoſite to all Immorality, Prophaneneſs, and Idolatry, that I think there will not need much Examination in ſo clear a Caſe; and that, by Conſequence, our main Enquiry is to be as to the Truth of the Facts thereto relating. And in this*

this Caſe, I fear not to Invite all our Scepticks and Unbelievers, to uſe their greateſt Nicety, their entire Skill, their ſhrewdeſt Abilities, and their utmoſt Sagacity in this Enquiry; being well aſſur'd from my own Obſervations in this Matter, That the proper Reſult of ſuch an exact Hiſtorical Enquiry will be as plainly and evidently on the Side of Reveal'd, *as I have demonſtrated in this Treatiſe, that Philoſophy and Mathematicks are on the Side of both* Natural and Reveal'd Religion. *And now having Premis'd this, I come to my main Deſign; to ſhew what is properly the* Religion *of a genuine and conſidering* Aſtronomer; *or what are properly the* Aſtronomical Principles *of Natural and Reveal'd Religion.*

Mr.

Mr. *Milton*'s HYMN TO THE CREATOR.

THeſe are thy glorious works, Parent of good,
Almighty, thine this univerſal Frame,
Thus wondrous fair; thy ſelf how wondrous then!
Unſpeakable, who ſit'ſt above theſe Heavens
To us inviſible, or dimly ſeen
In theſe thy loweſt Works; yet theſe declare
Thy Goodneſs beyond Thought, and Power Divine:
Speak ye who beſt can tell, ye Sons of Light,
Angels, for ye behold him, and with Songs
And choral Symphonies, Day without Night,
Circle his Throne rejoycing: ye in Heav'n,
On Earth joyn all ye Creatures to extoll
Him firſt, Him laſt, Him midſt, and without End.
Faireſt of Stars, laſt in the train of Night,
If better thou belong not to the Dawn,
Sure Pledge of Day, that crown'ſt the ſmiling Morn
With thy bright Circlet, praiſe him in thy Sphere
While Day ariſes, that ſweet Hour of Prime.
Thou Sun, of this great World both Eye and Soul,
Acknowledge him thy Greater, ſound his Praiſe
In thy eternal Courſe, both when thou climb'ſt,
And when high Noon haſt gain'd, and when thou fall'ſt.
Moon, that now meet'ſt the orient Sun, now fly'ſt,
With the fixt Stars, fixt in their Orb that flies,

And

And ye Five other wandring Fires that move
In myſtic Dance, not without Song, reſound
His Praiſe, who out of Darkneſs call'd up Light.
Air, and ye Elements, the eldeſt Birth
Of Nature's Womb, that in quaternion run
Perpetual Circle, multiform; and mix
And nouriſh all Things, let your ceaſeleſs Change
Vary to our great Maker ſtill new Praiſe.
Ye Miſts and Exhalations that now riſe
From Hill or ſteaming Lake, duſky or grey,
Till the Sun paint your fleecy Skirts with Gold,
In Honour to the World's great Author riſe:
Whether to deck with Clouds the uncolour'd Sky,
Or wet the thirſty Earth with falling Showers,
Riſing or falling ſtill advance his Praiſe.
His Praiſe ye Winds that from four Quarters blow,
Breath ſoft or loud; and wave your tops, ye Pines,
With every Plant, in ſign of Worſhip wave.
Fountains, and ye, that warble, as ye flow,
Melodious murmurs, warbling tune his Praiſe.
Joyn Voices all ye living Souls, ye Birds,
That ſinging up to Heaven's high Gate aſcend,
Bear on your Wings and in your Notes his Praiſe;
Ye that in Waters glide, and ye that walk
The Earth, and ſtately tread, or lowly creep;
Witneſs if I be ſilent, Morn or Even,
To Hill, or Valley, Fountain, or freſh Shade
Made Vocal by my Song, and taught his Praiſe.
Hail univerſal Lord! be bounteous ſtill
To give us only good; and if the Night
Have gathered ought of evil or conceal'd,
Diſperſe it, as now Light diſpels the Dark.

Paradiſe Loſt, Lib. V.

Aſtrono-

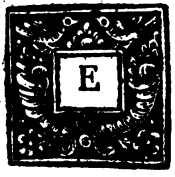
Aſtronomical PRINCIPLES OF RELIGION, NATURAL, and REVEAL'D.

PART I.

LEMMATA:

Or, The known Laws of Matter *and* Motion, *preparatory to the enſuing Treatiſe.*

(*Taken out of the* AUTHOR's Mathematical Philoſophy, *where they are all demonſtrated.*)

1. 

EVERY Body perſeveres in its own preſent State, whether it be that of Reſt, or uniform direct Motion; unleſs it be compelled by ſome Force impreſs'd, to change that State.

(2.) All Motion is of it ſelf Rectilinear.

(3.) All revolving Bodies endeavour to recede from the Center of their Motion; and by how much the Motion is the ſwifter, this Endeavour is the greater.

(4.) The Mutation of Motion is proportional to the moving Force impreſs'd; and is according to the Direction of that Line along which that Force is impreſs'd.

(5.) Re-action is always contrary and equal to Action. That is, the Actions of Two Bodies acting upon each other, whether they be Impulſes or Attractions, are always in oppoſite Directions, and are alſo equal.

(6.) If of two equal Bodies, void of Elaſticity, one of them which is in Motion meets the other at reſt, upon the meeting they will both proceed forwards together, to the ſame part, with half the Velocity of the Body which was moved.

(7.) If two equal Bodies, void of Elaſticity, do directly meet each other with the ſame Velocity, they upon the Colliſion will both of them reſt.

(8.) If two unequal Bodies, deſtitute of Elaſticity, meet one another with ſuch Velocities, that by how much the greater exceeds the other in Magnitude, by ſo much it is exceeded by the leſſer in Swiftneſs, ſo that the Velocities are reciprocal to the Bodies; they will both reſt after that meeting.

(9.) If a moving Body ſtrike another at reſt, (but both void of Elaſticity) how unequal ſoever they be in Bulk and Quantity of Matter, they will both move after the ſhock with the ſame Velocity towards the ſame Parts, as in the

Sixth

Sixth Law: And the common Velocity will be ſo much leſs than the firſt, as both the Bodies together are greater than the Body firſt moved.

(10.) If two unequal Bodies, void of Elaſticity, which are moved with equal Velocity to oppoſite Parts, hit againſt one another, the Quantity of Motion in both, taken together after the Colliſion, will be the *Difference* only of the former Motions.

(11.) If two equal Bodies, void of Elaſticity, be mov'd with unequal Velocity towards the ſame Part, upon their Colliſion there will remain the ſame Quantity or *Sum* of their Motions; but the common Velocity will be only the half of both the former Velocities put together.

(12.) If of two unequal Bodies, void of Elaſticity, the Greater overtakes the Leſſer, the common Velocity, after the Shock, will be greater than half the Sum of the former Velocities. And on the contrary, it will be leſs when the leſſer Body overtakes the greater.

(13.) If a Body perfectly Elaſtic daſheth upon another Body of the ſame ſort which is Quieſcent and Equal; after the Colliſion the Motion will be wholly transferr'd into that which was quieſcent before, and with the ſame Celerity; but the Body which was mov'd before, will now reſt.

(14.) If two Bodies perfectly Elaſtic, which are equal, but mov'd with an unequal Celerity, daſh one upon another, they, whether they were before carried to the ſame part, or to the contrary, will, after the Contact, be mov'd each with that Celerity which the other had before.

(15.) Any Body, how great ſoever, may be moved by any Body, how ſmall ſoever, coming with any Velocity whatſoever.

(16.) When two Bodies, perfectly Elaſtical, are daſh'd one upon the other, they depart from one another with the ſame Celerity wherewith they approach'd one to the other; that is, not with the ſame *abſolute*, but *relative* Celerity.

(17.) If two Bodies perfectly Elaſtical, do each return to the Impulſe with the ſame Celerity wherewith they rebounded from it; they will each of them, after the Second Impulſe, acquire the ſame Celerity as they had before the firſt Meeting.

(18.) If two Bodies meet one another, whether they be Elaſtic or not Elaſtic, there doth not always remain the ſame Quantity of Motion as was before, but it may be greater or leſs.

(19.) If a Body perfectly Elaſtical, which is greater, hits upon a leſſer one which is quieſcent, it will give a Velocity to it leſs than the double of its own.

(20.) If two Bodies perfectly Elaſtic, the Celerities whereof are in reciprocal Proportion to their Magnitudes, meet one another directly and oppoſitely, they will both rebound with the ſame Celerity with which they came to each other.

(21.) The Celerity which a greater Body perfectly Elaſtic, gives to a leſſer perfectly quieſcent, which is alſo perfectly Elaſtic, hath that Proportion to that Velocity, which the leſſer moved with the like Celerity gives to the greater when quieſcent, which the Magnitude of the greater hath to the Magnitude of the leſs.

(22.) Every

(22.) Every Body will in the ſame Time deſcribe the Diagonal of a Parallelogram with Forces conjunct, that it would do the Sides with thoſe Forces ſeparate.

(23.) All compound Forces and Motion whatever may be reduc'd into innumerable other direct Forces and Motions; and on the contrary, all direct Forces, and rectilinear Motions, may be ſuppos'd to be compounded of innumerable oblique Motions and Forces.

(24.) The Quantity of Motion which is collected, by taking the Sum of the Motions to the ſame Part, and the Difference of thoſe to the contrary Parts, is not chang'd by the Actions of Bodies one upon another.

(25.) The common Center of Gravity of a Syſtem of Bodies doth not change its State either of Motion or Reſt, from the Actions of the Bodies amongſt themſelves, (whether they be Attractions or Impulſes;) and therefore the common Center of Gravity of all Bodies acting upon one another (Actions and Impediments, whether External or otherwiſe ariſing, being excluded) doth either reſt, or is mov'd uniformly ſtraight forwards.

(26.) The Motions of two Bodies included in a given Space, and partaking of the Motion thereof, are the ſame amongſt themſelves, whether that Space reſteth, or the ſame is mov'd uniformly ſtraight forward, without a Circular Motion.

(27.) If Bodies be mov'd in any wiſe amongſt themſelves, and be preſſed with equal acceleretive Forces according to parallel Lines, they will all continue to be mov'd in the ſame manner amongſt themſelves, as if they were not preſſed with thoſe Forces.

PROPOSITIONS.

III. The Velocities of a Body accelerated by any uniform urging Force whatever, are betwixt themſelves, as the Times are wherein that uniform Force is impreſs'd; that is, in Double the Time Double, in Triple the Time Triple, and in Four Times the Time Quadruple.

IV. The Lines which Bodies by any urging uniform Force do deſcribe, are in the duplicate proportion of the Times, *i. e.* if the Times be Seconds, One, Two, Three, Four, Five, *&c.* the whole Lines deſcrib'd will be amongſt themſelves, as One, Four, Nine, Sixteen, Twenty-five, *&c.* which are the Squares of the former.

VII. In a Cycloid inverted, whoſe Axis is erected perpendicular, the Times of the Deſcent wherein a Body let down from any Point whatever in it, comes to the loweſt Point, are always equal betwixt themſelves.

VIII. All Projectiles, not perpendicular to the Horizon, deſcribe Parabola's, ſo far as they are not hindred by the reſiſtance of the Air.

IX. If two Bodies do in equal Times run over Two whole unequal Circumferences, with an equable Motion, the centripetal Force in the greater Circumference will be to that which is in the leſs, as the Circumferences are one to another directly; or, which is the ſame, as their Diameters, or Radii.

X. If two Bodies revolve in the ſame, or equal Circles with unequal Celerities, but both with an

an equable Motion, the centripetal Force of the Swifter will be to that of the Slower, in the Proportion of the Celerities duplicated; or as the Squares of the Arches deſcribed together.

XI. If two Bodies revolve in unequal Circles with equal Velocity, their centripetal Forces will be in the reciprocal Proportion of their Circumference or Diameters; ſo that in the leſſer Circumference there will be the greater centripetal Force, and in the greater the leſſer.

XII. If two Bodies be mov'd in unequal Circles, with an unequal Velocity, in the ſub-duplicate Proportion of the Circumferences, Diameters, or Radii, the centripetal Forces will be equal every where, and neither increas'd in the Acceſs nor Receſs.

XIII. If two Bodies be mov'd in unequal Circles, with an unequal Velocity, in the ſub-duplicate Proportion of the Circumferences, Diameters, or Radii, reciprocally; ſo that in the greater Circle the Velocity be the leſſer, and in the leſſer Circle the greater, and this in the ſaid ſub-duplicate reciprocal Proportion, the centripetal Force will be reciprocally as the Squares of the Radii or Diſtances.

XIV. If two Bodies revolve in unequal Circles with an unequal Celerity; ſo that by how much greater the Radius, Diameter or Circumference is, ſo much the leſs the Velocity is; and by how much the leſs the Radius is, ſo much the greater is the Velocity, and this in the Reciprocal Proportion of the Radii, the Centri-petal Forces will be as the Cubes of the Radii reciprocally.

XV. The Area's, which revolving Bodies do deſcribe by Radii drawn unto the unmovable

Center of Force acting upon them, do both lie in immoveable Planes, and are proportional to the Times; and ſo in any given Time are every-where equal; the Velocity of Motion in the leſſer Diſtance, and the Slowneſs thereof in the greater ſo tempering the Deſcription of the Area's, that from thoſe various Diſtances no Difference of the Spaces run over in the given Time doth ever ariſe.

XVI. Every Body which is mov'd in a Curve Line, and doth by a Radius drawn to ſome Point, either immoveable, or going forwards uniformly with a Rectilineal Motion, deſcribe Areas about that Point proportional to the Times; is urged or impreſs'd by a Centripetal Force tending to the ſame Point.

XIX. If a Body be mov'd in an Ellipſis about the Center of the ſame, the Centripetal Force will be directly as the Diſtance of the Body from the ſame Center.

XX. If a Body be mov'd in a Spiral Line, which cuts all the Radii in the ſame Angle, the Centripetal Force will be reciprocally as the Cube of the Diſtance from the Center of the Spiral.

XXI. If a Body be mov'd in an Ellipſis or Parabola, or Hyperbola, about its Focus, the Centripetal Force will be every where in the duplicate Proportion of the Diſtance from the ſame Focus reciprocally.

XXII. The Velocity of a Body moving in a Parabola about a Body placed in the Focus, the Force whereof is in the reciprocal duplicate Proportion of the Diſtances, is every where to the Velocity of a Body revolving in a Circle in the ſame time, in the ſubduplicate Proportion of

the

the Number, Two to Unity; or as the Diagonal of a Square to its Side; that is, as 10 to 7 nearly.

XXVII. Two Bodies attracting one another, deſcribe like Figures both about the Common Center of Gravity, and about one another; that is, whilſt they really deſcribe like Figures about the Common Center of Gravity, the Eye being placed in either of the two, and not perceiving its own Motion, or that of the Center of Gravity, a Figure like to the ſame will thereby ſeem to it to be deſcrib'd.

XXXI. If a primary Planet revolving about the Sun carry a Moon along with it, this will be ſo mov'd about the Primary, that it will perpetually be accelerated from the Quadrature with the Sun, unto the Conjunction or Oppoſition next following; but from the Conjunction to the Quadrature, it will be retarded; and conſequently will be carried more ſwiftly about the Conjunction and Oppoſition, but more ſlowly about the Quadratures.

XXXVIII. The abſolute Force of the Sun in the diſturbing the Secondary Planets, and the Effects thereof, in divers Diſtances from the Sun, is in the triplicate Proportion of thoſe Diſtances inverſly.

XLI. If a Fluid be contain'd in a Channel form'd in the Surface of any Planet, Primary or Secondary, and be uniformly revolv'd together with the Planet with a diurnal periodic Motion; each Part of this Fluid will be accelerated and retarded by turns; in its Conjunction and Oppoſition, or at Noon-day and Midnight, it will be ſwifter; in the Quadratures, or at the 6th Hour Evening and Morning, it will be ſlower than

than the contiguous Surface of the Globe; and thus there will be a flux and reflux in the Channel, by turns perpetually.

XLII. If a Solid Ring be put about a Globe perfectly ſpherical, at the Equator of the ſame, and ſtick to it; there will indeed be no Motion of Flux and Reflux, but the vibrating Motion of Inclination, and the Preceſſion of the Nodes, will remain. Let the Globe have the ſame Axis with the Ring, and compleat its Revolution in the ſame time; and with its Surface touch the Ring inwardly, and cleave to it; by its participating of the Motion thereof, the whole Frame will vibrate to and fro, and the Nodes will go back.

XLIV. If towards each equal Points of a Spherical Phyſical Surface of equal Thickneſs every where, but which Thickneſs is ſo ſmall that it is not to be regarded, there be a Tendency of equal Centripetal Forces decreaſing in the duplicate Proportion of the Diſtances from the ſame Points; any Corpuſcle placed any where within this Surface, will not be attracted unto any Part by the ſaid Force; but will either reſt, or continue that Motion which is begun without any Diſturbance, and in the ſame manner as if it were acted upon with no Force at all from that Surface: And the caſe is the ſame in any Spherical concave Space within a ſolid Sphere, about its Center.

XLVII. If unto each Point of ſome given Sphere, which is Homogeneous, or of equal Denſity every where, there be a Tendency of equal Centripetal Forces decreaſing in the duplicate Proportion of the Diſtances from the Points; a Corpuſcle placed within the Sphere, is attracted with

with a Force proportional to its Diſtance from the Center thereof.

LIX. If the Denſity of a Fluid, compos'd of Particles which do flee from each other, be as the Compreſſion; ſo that if the preſſing Force be two, or four, or eightfold, the Denſity thence ariſing is ſo likewiſe; the Centrifugal Force of the Particles is reciprocally proportional to the Diſtances from the Center: And, *vice verſâ*, where the ſaid Force is reciprocally proportional to the Diſtances from their Centers, the Particles which flee from each other compoſe an elaſtic Fluid, the Denſity whereof is proportional to the Compreſſion.

LX. The Quantity of Matter in all Bodies, is exactly proportional to their Weight.

LXII. Bodies mov'd with an unequal Velocity in a very Subtle Fluid, are reſiſted by the Fluid in the Duplicate Proportion of their Velocity.

LXIV. As the Reſiſtance of Fluids in divers Velocities is in the duplicate Proportion of the Velocity; ſo in divers Denſities the Velocity being given, it is in the direct Proportion of the Denſity it ſelf; but the Denſity and Velocity being given, in the duplicate Proportion of the Diameters; and conſequently the Reſiſtance in general is in a Proportion compounded of the duplicate Proportion of the Velocity, and the duplicate Proportion of Diameters, and the ſimple Proportion of the Denſity of the Medium directly.

LXVII. If a ſolid Cylinder, infinitely long, be revolv'd in an uniform and infinite Fluid about its own Axis, the Poſition whereof is given, and the Fluid be mov'd round by the Impulſe

pulſe of this Cylinder only; and every Part of the Fluid perſeveres uniformly in its Motion; the periodic Times of the Fluid will be as their Diſtances from the Axis of the Cylinder directly; and the Velocities will be every where equal.

LXVIII. If a ſolid Sphere, in an uniform and infinite Fluid, be revolv'd uniformly about its own Axis, the Poſition whereof is given; and by the Impulſe of this alone the Fluid be turned round, and every part of the Fluid perſeveres uniformly in its Motion; the periodic Times of the Parts of the Fluid will be as the Squares of the Diſtances from the Center of the Sphere.

LXIX. The Velocities of all the Planets, whether Primary or Secondary, about their Central Bodies, by being in the reciprocal ſubduplicate Proportion of the Diſtances from their Centers, do wholly overthrow the *Carteſian* Hypotheſis of Vortices.

LXX. The Six Primary Planets, each with its own Satellites, where they have any, encompaſs the Sun with their Orbs, and revolve about it.

LXXI. The periodic Times of the ſix Primary Planets, are in the ſeſqui-alteral Proportion of their mean Diſtances from the Sun.

LXXII. The ſix Primary Planets do always, by Rays drawn to the Sun, deſcribe equal Areas in equal Times, and in general Areas proportional to the Times.

LXXIII. The Moon, by Rays drawn to the Center of the Earth, deſcribes in equal Times Areas almoſt equal; and in general, Areas almoſt proportional to the Times.

LXXIV. The

LXXIV. The Satellites of *Jupiter* do, by Rays drawn to the Center of *Jupiter*, deſcribe Areas proportional to the Times: And their periodic Times are in the ſeſqui-alteral Proportion of their Diſtances from the Center of their Primary.

LXXV. The Satellites of *Saturn* do, by Rays drawn to the Center of *Saturn*, deſcribe Areas proportional to the Times: And their periodic Times are in the ſeſqui-alteral Proportion of their Diſtances from the Center of their Primary.

LXXVI. The Force whereby the Primary Planets are perpetually drawn back from right Lines, and retain'd in their Orbs, does reſpect the Sun; and is as the Squares of the Diſtances from the Center of the Sun reciprocally.

LXXVII. The Force wherewith the Satellites of *Jupiter* and *Saturn* are perpetually drawn back from right Lines, and retain'd in their Orbs, reſpect the Centers of *Jupiter* and *Saturn* reſpectively; and is as the Squares of the Diſtances from thoſe Centers reciprocally.

LXXVIII. The Force wherewith the Moon is perpetually drawn back from a Rectilinear Motion, and retain'd in its Orb, reſpects the Center of the Earth; and is as the Squares of the ſeveral Diſtances from the ſame Center reciprocally.

PART II.

A particular Account of the Syſtem of the Univerſe.

THE *Sun*, that immenſe and amazing Globe of Fire, the Fountain of all the Light and Heat of the whole Planetary and Cometary World, is in Diameter 763 000 Miles, in Surface it contains 1,813.200,000.000 Square Miles, and in Solidity 23.000,000.000,000 000 Cubical Ones, in Magnitude 900.000, and in Quantity of Matter 230.000 Times as great as the Earth, tho' only a Quarter ſo Denſe; and all Bodies weigh 24 Times as much on its Surface, as on the Surface of the Earth. It is ſituate near the Center of Gravity of the whole Syſtem, and revolves in about 25 Days and a half round its own Axis. It has frequently Spots, and ſometimes brighter Parts ſeen upon its Surface, of vaſt Dimenſions; as if they were great burning Vulcanes, ſometimes clouded with Smoke, and ſometimes clear. Its Heat, on its own Surface

is above 11000 Times as Intenſe as that on the Earth. All the Planets and Comets gravitate to the *Sun* in a duplicate reciprocal Proportion of their Diſtances from it, and are thereby retained in their ſeveral Orbits. Their Periodical Times are in a ſeſquiplicate or ſeſquialteral proportion to their Diſtances; that is, the Triplicate or Cubes of the Diſtances, are as the Duplicate or Squares of the periodical Times; and that to the greateſt Exactneſs poſſible; which equally obtains in the ſecondary Planets, with regard to their primary Ones alſo; and is the fundamental Law of the entire Syſtem.

Mercury is the neareſt to the *Sun* of all the known Planets. Its utmoſt Elongation from it, to an Eye on the Earth is but 28 Degrees, ſo that it is but rarely ſeen by us. This Planet is in Diameter 4.248 Miles, in Surface it contains 55,000.000 of ſquare Miles; and in Solidity 39.000,000.000 of Cubical Ones, & is 32,000.000 Miles diſtant from the *Sun*, and deſcribes a very Eccentrical Ellipſis about it in leſs than 3 Months, or in 88 Days. The Eccentricity of its Orbit is $\frac{210}{1000}$ of its mean Diſtance from the *Sun*; and by its Poſition muſt appear thro' a Teleſcope with Phaſes like thoſe of the Moon. No ſecondary Planets have yet been obſerved about it, nor any Diurnal Rotation. It enjoys above 6 Times as much Light and Heat from the Sun, as doth the Earth; and it appears very rarely like a Spot in the Diſk of the Sun, in its Retrograde Conjunctions, when it paſſes between the Sun and Earth.

Venus is ſomewhat higher in the Syſtem, and ſo has its utmoſt Elongation 45 Degrees. It is a larger Planet than *Mercury*, and comes ſometimes

times much nearer to us. It is our Morning and Evening Star by turns, and is the Brighteſt of the Heavenly Bodies to us, next the Moon, as caſting a viſible Shadow in the Dark, and ſometimes appearing in the very Day-time alſo. It is in Diameter 7.900 Miles; in Surface it contains 2.000,000.000 of Square Miles; and in Solid it is 264.000,000.000 of Cubical Ones; and is diſtant 59,000.000 from the Sun, and deſcribes its Ellipſis about it in 7 Months and a half, or 225 Days. The Eccentricity of its Orbit is but $\frac{7}{1000}$ of its mean Diſtance from the Sun. It moſt plainly thro' the Telleſcope appears with Phaſes, and Horned like the Moon. No ſecondary Planets have yet been diſcovered about it, yet has it a Diurnal Revolution on its own Axis in 23 Hours. It receives almoſt double the Light and Heat from the Sun which the Earth does; and appears very rarely as a Spot in the Sun alſo.

The *Earth* is the next Planet to *Venus*, and has the Moon for its ſecondary Planet; the common Center of whoſe Gravity deſcribes an Ellipſis about the Sun in one Year, or 365 Days and a Quarter, nearly; the Eccentricity of its Orbit is $\frac{17}{1000}$ of its mean Diſtance from the Sun, in Surface it contains 200,000.000 of Square Miles, and in Solidity 266.000,000.000 of Cubical Ones, and is in Diameter 7.970 Miles. and is diſtant from the Sun 81,000.000 Miles. This Annual Motion is perform'd in the Ecliptick, and is directed, as is that of all the Planets, primary and ſecondary, from *Weſt* to *Eaſt*, or according to the Order of the Signs, and therefore cauſes the Sun to have an apparent Annual Motion the ſame way, and in the

ſame

ſame Plain; but as ſtill in the oppoſite Point of the Ecliptick. It has alſo a Diurnal Rotation upon its own Axis from *Weſt* to *Eaſt* in 24 Hours, and ſo occaſions an apparent Motion of all the Heavenly Bodies from *Eaſt* to *Weſt* in the ſame time. The Axis of the Diurnal Motion is 23 Degrees and one half, oblique to that of the Ecliptick, which occaſions the Varieties of *Spring*, *Summer*, *Autumn*, and *Winter*. It is in Figure an Oblate Spheroid, as having the Diameter of its Equator about 62 Miles longer than its Axis, on Account of the Elevation of the Equatorial and Depreſſion of the Polar Regions, occaſion'd by the centrifugal Force of the Diurnal Motion.

Mars is ſtill higher in the Syſtem, and looks more red and fiery than the reſt of the Planets. It takes a larger Circuit than the Earth, and ſo comes to its Conjunction, Quadratures and Oppoſition; and in ſome Degree imitates the Phaſes of the Moon, being ſometimes only Gibbous, tho' it cannot be at all Horned like the other. This Planet deſcribes its Ellipſis about the Sun in leſs than 2 Years, or in 687 Days. The Eccentricity of its Orbit is $\frac{21}{1000}$ of its mean Diſtance from the Sun; it is in Diameter 4444 Miles; in Surface it contains 60,000.000 of Square Miles; and in Solidity 44.000,000.000 of Cubical Ones; and is diſtant from the Sun 123,000.000 Miles; it has no ſecondary Planet that can be ſeen, but revolves about its own Axis in 24 Hours and 40 Minutes. The Quantity of Light and Heat it enjoys from the Sun is between one half and one third of what the Earth receives from it. It alſo appears to us upon the Earth to be ſometimes Direct, ſome-

times Stationary, and ſometimes Retrograde in its Courſe, as all the ſuperior Planets moſt remarkably do; which Appearances, their higher Situation, and ſlower Angular Motion, or longer Periods, muſt neceſſarily produce, without the leaſt Alteration of their real progreſſive Motion about the Sun all the while.

Jupiter, the largeſt of all the Planets, is much higher in the Syſtem, and has four Satellites or Moons revolving about it; and all by their common Center of Gravity deſcribe a very great Ellipſis about the Sun. The Eccentricity of its Orbit is $\frac{48}{1000}$ of its mean Diſtance from the Sun. It comes to its Conjunction, Quadratures, and Oppoſition, as well as *Mars*; but at ſo great a Diſtance can never appear other than full, or nearly ſo. It is in Diameter 81.000 Miles; in Surface it contains 20.000,000.000 of Square Miles, and in Solidity 280,000 000, 000.000 Cubical Ones; and revolves about the Sun in Eleven Years and Ten Months, or 4332 Days and a Half, at the Middle Diſtance of 424,000.000 Miles. It revolves about its own Axis in 9 Hours, and 56 Minutes, which makes its Figure that of an Oblate Spheroid, having the Diameters of its Equator conſiderably longer than its Axis. The Quantity of Light and Heat it receives from the Sun is but one Twenty-ſeventh Part ſo great as ours on the Earth. Its Quantity of Matter is about 220 Times ſo great as that of the Earth. Its Denſity is about one fifth Part of the Earth's, and ſo the Weight of all Bodies on its Surface is about double to that with us. It is alſo Direct, Stationary and Retrograde as *Mars*, but not in ſo great a Degree. It has Belts, like Clouds, lying

lying ſomewhat regularly along the Equatorial Parts, but ſubject to many Changes and Variations.

Saturn, the higheſt and moſt remote of all the known Planets, has five Satellites or Moons, and a vaſt but thin Ring encompaſſing his Body, as an Horizon does a Globe; all which, or rather the common Center of their Gravity, deſcribes an Ellipſis about the Sun. The Eccentricity of its Orbit is $\frac{55}{1000}$ of its mean Diſtance from the Sun. It comes to its Conjunction, Quadratures and Oppoſition, as well as the two former, but with no viſible Decreaſe of its Light at its Quadratures, which is ſcarce to be expected at ſo great a Diſtance. It revolves about the Sun in about 29 Years and a half, or about 10.760 Days. It is in Diameter 68.000 Miles; in Surface it contains 14.000,000.000 of Square Miles, and in Solidity 160,000 000, 000.000 of Cubical Ones, at the mean Diſtance of 777,000.000 Miles from the Sun. Its Quantity of Matter is about 94 Times as great as that of the Earth, tho' its Denſity be only between a fixth and a ſeventh Part ſo great as that of the Earth's; and the Weight of Bodies on its Surface is to that on the Surface of the Earth as about five to four. It is not yet certainly known to revolve about its own Axis, tho' its Ring is ſaid to do ſo. The Light and Heat communicated to it by the Sun are not quite the Ninetieth Part ſo great, as thoſe beſtow'd on the Earth. It is alſo in ſome meaſure Direct, Stationary and Retrograde, as well as the two former Planets, tho' ſtill in a leſs Degree.

Of the *Satellites*, or *ſecondary Planets*; the moſt eminent as to us is the *Moon*. It deſcribes an Ellipſis about our Earth, (or rather both Earth and Moon deſcribe their own ſimilar Ellipſes about the common Center of their Gravity, as is the Caſe in all ſuch Syſtems) in a periodical Month of 27 Day 57 Hours 43 Minutes. The Mean Eccentricity of its Orbit is $\frac{55}{1000}$ of its mean Diſtance from the Earth. It makes a Lunation or Synodical Month in 29 Days 12 Hours 44 Minutes. At a Mean it is diſtant from the Earth about 240,000 Miles, tho' with conſiderable Difference on Account of its great Eccentricity. The Moon's Diameter is 2175 Miles; in Surface it contains 14,000.000 of Square Miles; and in Solidity 5.000,000.000. of Cubical Ones. It has between the 39th and 40th part of the Quantity of Matter of the Earth; its Denſity is to that of the Earth as about 5 to 4, whilſt the Weight of all Bodies is but about a third Part ſo great on its Surface, as on that of the Earth. It revolves from *Weſt* to *Eaſt* upon its own Axis, exactly in a periodical Month, and thereby turns in general the ſame Face towards the Earth continually; yet does the Inequality of its Motion, and the Obliquity of its Axis, occaſion ſome unequal *Librations* here alſo. It has very high Mountains, and very deep regular Valleys, and has lately had an Atmoſphere diſcover'd about it; nor does it ſeem unlike the Earth as to Sea and Land. It has all variety of Phaſes, according to its various Poſition with reſpect to the Sun, or according as we on the Earth can ſee the whole, the half, or only ſome Part of its enlighten'd Hemiſphere. Its own Day and Night are

are each half a ſynodical Month, or near 15 of our Days long. Its Orbit is inclin'd to that of the Ecliptick, at the leaſt in an Angle of 5 Degrees; ſo it but ſometimes paſſes juſt between the Sun and Earth at the new Moon, and but ſometimes falls into the Earth's Conical Shadow at the Full. Yet when it is in, or near the Nodes, or Interſection of thoſe Plains, it cannot avoid thoſe Accidents; from the former of which the *Solar*, and from the latter of which the *Lunar Eclipſes* are derived.

Jupiter's *four Satellits*, or ſecondary Planets, are viſible with an ordinary Teleſcope, and ſometimes paſs like Spots on the Face of *Jupiter*, and ſometimes enter into his Shadow; which to an Eye in *Jupiter* would cauſe Appearances juſt like our *Solar* and *Lunar Eclipſes*. They revolve about him in Circles, or Ellipſes very little Eccentrical; the Innermoſt at 130,000 Miles diſtance, in 1 Day 18 Hours and a half; the next at 364,000 Miles diſtance, in 3 Days 13 Hours and a quarter; the Third at 580,000 Miles diſtance in 7 Days 3 $\frac{1}{3}$ Hours; the Fourth at 1,000,000 Miles diſtance, in 16 Days 16 $\frac{1}{2}$ Hours. The Cubes of their Diſtances are alſo as the Squares of their periodical Times: and ſo they are kept in their Curvilinear Orbits by their Gravity towards *Jupiter*'s Center, in a duplicate reciprocal Proportion from it; as is the Caſe of all the Planets, both Primary and Secondary about the Sun.

Saturn has *five Satellites* or ſecondary Planets. The Fourth in order from *Saturn* is the largeſt, and was diſcovered by the celebrated *Hugenius*; the Third and Fifth are viſible in the next Degree; but the Knowledge of the two Innermoſt are wholly owing

to *Caſſini*'s extraordinary Glaſſes and Diligence. They all revolve in Orbits almoſt Circular, and are all in or very near the Plain of his Ring, which is inclined in an Angle of 31 Degrees to that of the Ecliptick. The innermoſt revolves about *Saturn* at 146,000 Miles diſtance, in 1 Day 21 Hours one third; the next at 187. 000 Miles, in 2 Days, 17 Hours, and two thirds; the Third at 263,000 Miles, in 4 Days, 13 Hours, three Quarters; the Fourth or large one at 600, 000 Miles in 15 Days 22 Hours two thirds; the laſt at 1,800.000 Miles, in 79 Days 22 Hours. Nor is it improbable, that the large Interval between the Fourth and Fifth may have a Sixth, which is yet to us inviſible, as *Hugenius* conjectures. As to that ſtrange and unparallel'd Phænomenon of *Saturn*'s *Ring*, which is commonly viſible through an ordinary Teleſcope; its Thickneſs may well be 500, or perhaps 1000 Miles, tho' it be at that Diſtance almoſt inviſible; its Breadth is certainly about 21,000 Miles, and its diſtance from the Body of *Saturn* on every Side as much. It cauſes many different Appearances, not only to us on Earth, but much more to the Inhabitants of *Saturn*, if any ſuch there are; all which *Hugenius* has deſcrib'd in his Syſtem of that Planet, and others from him.

As to the *Syſtem* of the *Comets*, it appears now to be very conſiderable, and indeed they are the moſt numerous Bodies of the entire *Solar Syſtem*. They appear both by their Bigneſs and Motions to be a ſort of Planets, revolving about the Sun in Ellipſes, ſo very oblong, that their viſible Parts ſeem in a manner Parabolical; but have ſuch vaſt Atmoſpheres about them,

and

and Tails deriv'd from the ſame, eſpecially after their *Perihelia*, and thoſe ſubject to ſuch Mutations, paſs thro' ſo much Cold and Darkneſs near their *Aphelia*, and ſo much Light and Heat near their *Perihelia*, as imply them deſign'd for very different Purpoſes from the Planets; and indeed, as to their outward Parts, in their preſent State they are plainly uninhabitable. Yet by paſſing through the Planetary Regions in all Plains and Directions, they fully prove thoſe Spaces to be deſtitute of Reſiſtance or Solid Matter, and ſeem fit to cauſe vaſt Mutations in the Planets, particularly in bringing on them Deluges and Conflagrations, according as the Planets paſs through the Atmoſphere, in their Deſcent to, or Aſcent from the Sun; and ſo ſeem capable of being the Inſtruments of Divine Vengeance upon the wicked Inhabitants of any of thoſe Worlds; and of burning up, or perhaps, of purging the outward Regions of them in order to a Renovation. This, I mean, ſeems likely to be their uſe in the preſent State; tho' indeed they do withal ſeem at preſent *Chaos*'s or Worlds in Confuſion, but capable of a Change to Orbits nearer Circular, and then of ſettling into a State of Order, and of becoming fit for Habitation like the Planets; but theſe Conjectures are to be left to farther Enquiry, when it pleaſes the Divine Providence to afford us more Light about them: However, in my *Solar Syſtem* I have deſcribed the Orbits of all the Comets that Dr. *Halley* has put into his Catalogue, and that in the Order of their Nearneſs to the Sun, at their *Perihelia*, and as they are in their proper Plains, without any reduction to the Ecliptick. They are in Number 21; for tho' he has 24 there ſet

down,(all which are accordingly numbered there) yet becauſe he ſcarcely doubts that three of them are the ſame Comet, and gueſſes that two more are alſo the ſame, in both which Caſes I fully agree with him; the real Number will then be but 21. The former of theſe two (which alſo ſeems to have appeared before his Catalogue begins, *Anno Domini* 1456.) was ſeen in 1531, 1607, and 1682, whoſe Period therefore is 75 or 76 Years, and whoſe Return is to be expected in 1758. The latter of them appeared *Anno Dom.* 1532; and probably the ſame again in 1661, whoſe Period therefore being about 129 Years, it is to be expected again in 1789. The moſt eminent of them all appear'd in the 44th Year before the Chriſtian Æra; as alſo *A. D.* 531, or 532; and *A. D.* 1106; and laſtly, *A. D.* 1680, 1681, when I ſaw it; and ſo has made within the Limits of our preſent Hiſtories, three periodical Revolutions, in about 575 Years apiece. The middle diſtance of the former from the Sun's Center muſt be 1458, 000.000 of Miles, and its longer Axis twice ſo long, and ſo its *Aphelion* Diſtance near four Times as great as the diſtance of *Saturn*; and its greateſt diſtance to its leaſt as about 60 to 1; and therefore its greateſt Light and Heat to its leaſt as about 3600 to 1. The middle Diſtance of the ſecond muſt be about 2025,000.000 of Miles, and its longer Axis twice ſo long, and ſo its *Aphelion* diſtance between 5 and 6 times as great as the diſtance of *Saturn*; and its greateſt Diſtance to its leaſt, as more than 100 to 1, and therefore its greateſt Light and Heat to its leaſt, as more than Ten Thouſand to One. The Middle Diſtance of the laſt muſt be about

5.600,

5.600,000.000. Miles; and its longer Axis twice ſo long; and ſo its Aphelion Diſtance about 14 times as great as the diſtance of *Saturn*; and its greateſt diſtance to its leaſt as above 20.000 to 1. and ſo its greateſt Light and Heat to its leaſt as above 400,000.000 to 1.

As to the *Fixed Stars*, they are vaſtly remote from this our Planetary and Cometary Syſtem, but may perhaps every one be the Center of another ſuch like Syſtem. Dr. *Hook* and Mr. *Flamſteed* think they have diſcover'd their Annual Parallax, and that it is about 45", which will imply them to be about 700.000,000.000 of Miles diſtant from the Sun; or, according to an exact Calculation in the like Caſe, farther than a Bullet ſhot out of a Musket would go in 5000 Years. But of ſuch vaſt and numberleſs Syſtems, if ſuch they are, we know very little: Only ſo much we know of the Planetary and Cometary World, and of the Probability of vaſtly more among the Fixed Stars (to ſay nothing of the nobleſt or inviſible Parts of the Creation, nor of the particular Phænomena here below) as is ſufficient to make us cry out with the *Pſalmiſt*, *O Lord how manifold are thy Works! In Wiſdom haſt thou made them all!*

PART

PART III.

The Truth of the foregoing SYSTEM *briefly* Demonſtrated.

IN order to let the Reader ſee the Certainty of our preſent Syſtem of Aſtronomy, and to prepare the way for his entire Satisfaction, as to the noble Inferences that ſhall hereafter be drawn from the ſame, I ſhall now attempt, not only to prove the foregoing Syſtem, in all its Parts, to be very *probable*, and ſo preferable to any other Hypotheſis; but to *Demonſtrate* it to be *really true and certain*; and this after ſo familiar a manner, that ordinary Mathematicians may eaſily apprehend the Force of each Argument, and ſee the Evidence for the ſeveral Concluſions all along. Now the Propoſitions I ſhall here Demonſtrate are theſe:

I. That the *Diurnal Motion*, or that which occaſions the Succeſſion of Day and Night, and the apparent riſing and ſetting of the Sun, Moon, and Stars, in the ſpace of 24 Hours, which we call

call a *Day*, belongs to the Earth, and not to the Heavens.

II. That the *Annual Motion*, or that which occaſions the Succeſſion of Summer and Winter, and the apparent Motion of the Sun through the Ecliptick in the Space of $365\frac{1}{4}$ Days, which we call a *Year*, belongs to the Earth, and not to the Sun.

III. That there is an Univerſal *Power of Gravity* acting in the whole Syſtem; whereby every Body, and part of a Body, Attracts and is Attracted by every other Body and part of a Body through the whole Syſtem; that this Power of Gravity is greater in greater Bodies, and leſſer in leſſer; and this in the exact proportion of ſuch their Magnitude: That it is alſo greater when the Bodies are nearer, and leſſer when they are farther off; and this in the exact duplicate proportion of ſuch their nearneſs: That this Power is the ſame in all Places, and at all Times, and to all Bodies: And that, laſtly, this Power is entirely Immechanical, or beyond the Power of all material Agents whatſoever.

IV. That the *Orbits*, *Revolutions*, *Diſtances*, *Quantities of Matter*, *Denſities*, *Gravity on the Surfaces*, *Revolutions about their Axes*, *Quantities of Light and Heat*, &c. above ſet down, concerning the Sun and Planets, both Primary and Secondary, with thoſe of the Comets alſo, are true and certain; with an Account of the Ways whereby we diſcover every one of thoſe Particulars.

PROP.

PROP. I.

The *Diurnal Motion*, or that which occaſions the Revolution of Day and Night, and the apparent riſing and ſetting of the Sun, Moon, and Stars, in the Space of 24 Hours, which we call a *Day*, belongs to the Earth, and not to the Heavens.

DEMONSTRATION.

(1.) All the Phænomena or Appearances relating to this Matter, are now certainly known to be equally natural and neceſſary Conſequences of a diurnal Revolution of the Earth from *Weſt* to *Eaſt*, as of the like Revolution of the whole Syſtem of the Heavens from *Eaſt* to *Weſt*; as thoſe who have apply'd themſelves to this part of Aſtronomy do well know: Juſt as it is equal to a Perſon that deſires to ſee quite round a Terreſtrial Globe, ſet in a proper Poſition; whether he walks himſelf round that Globe, while it ſtands ſtill; or whether the ſeveral parts of that Globe be turned round to him, while he ſtands ſtill: Which if it be granted; and the Vaſtneſs of the Syſtem about us be conſider'd, with reſpect to the Smallneſs of our Earth; the immenſe ſwiftneſs neceſſary in one caſe, compar'd with the greater ſlowneſs in the other; the prodigious diverſity of perplex'd Motions in the Sun, the Planets, the Comets, and the fix'd Stars to be provided for in the former Hypotheſis, with the eaſy ſimple Motion of one Globe about its own Axis to be allow'd in the latter; the diſproportion, as to the probability of the

one

one and the other Notion, will appear vaſtly great and prodigious. Whether is it more fit and reaſonable for 100 Auditors, in a Courſe of Geography, to have a Terreſtrial Globe turned once round on its own Axis, in order to their diſtinct and gradual view of the particular Countries thereon deſcrib'd; or to have Carpenters ſet to work to remove the Room, and the Houſe it ſelf, and to carry it on Wheels in order to avoid that ſingle Circumvolution? When once we are ſatisfyed of the Juſtneſs of ſuch a procedure in the one Caſe, we may begin to think of allowing the like Juſtneſs in the other; but not ſooner.

(2.) There are no mechanical Laws of Motion known in the World, which can account for ſuch a Diurnal Revolution of the Heavens; nay, it is directly contrary to all ſuch known Laws whatſoever. 'Tis true, a Clock or Machine may have ſeveral diſtinct Motions within, and yet a Spectator may turn the whole round on its Axis at the ſame time; becauſe all the Parts and Wheels are connected together, and take hold of each other, by material contract and inſertion: So that he who removes one part, does of neceſſity remove all the reſt. But this is far from the real Caſe in the World about us; where the ſeveral Bodies are vaſtly remote from, and unconnected with each other; and where therefore no ſuch (imaginary) Revolution of any (fictitious) *Primum Mobile*, or material external Sphere can affect or move the ſeveral Bodies therein contain'd. When once we ſee the Revolution of a large Wheel make other inward Wheels, which it does not touch, dance attendance thereto, and commence circular Revolutions

tions round its Axis, we may begin to think of ſuch a parallel Notion as to the preſent Syſtem, but not ſooner.

(3.) There is no Example of ſuch Periodical Revolutions, which carry different and ſeperate Bodies round the ſame Axis, in the ſame time, in the whole World about us. No Vortices or Whirlpools excited in Fluids do ſo: None of the Primary Planets are carried ſo about the Sun, nor Secondary ones about their Primaries. Nor indeed is the thing poſſible in any mechanical Method whatſoever, agreeing to the preſent Syſtem of things, that we know of. So that 'tis meerly an Hypotheſis or Romance, unſupported by all good Evidence, and deriv'd entirely from the Prejudices and Notions of the Vulgar, before they are acquainted with the Principles neceſſary to make them competent Judges in ſuch Matters.

(4.) The frequent, if not conſtant, Diurnal Revolutions of the reſt of the Heavenly Bodies, renders it moſt highly rational, if not neceſſary, to allow the like Revolution to our Earth. If we caſt our Eyes abroad, and uſe Teleſcopes to aſſiſt them, we ſhall find that *Jupiter* and *Mars* among the higher Planets; that *Venus* among the lower; that the Moon in our Neighbourhood; and that the Sun it ſelf in the Center of theſe Planetary Motions, have, for certain, ſuch a diurnal Revolution about their own Axes. Nor is it any way certain, that either *Saturn*, or *Mercury*, the ſecondary Planets, the Comets, or fixed Stars, *i. e.* that any of the Heavenly Bodies are deſtitute of ſuch a Motion. So that hence it is exceeding probable that our Earth may have the like Motion alſo.

(5.) The

(5.) The contrary Hypotheſis introduces the utmoſt Confuſion into the apparent Heavenly Motions, while 'tis certain there is no manner of reaſon for doing ſo. For what ſtrange Confuſion is it to imagine, that while in *Venus*, in the *Moon*, in *Mars*, and in *Jupiter*, if not in all the other Planets and heavenly Bodies beſides, there is ſuch a diurnal Rotation, as ſeverally produces a regular ſucceſſion of Day and Night in them, according to the ſeveral natural Periods of thoſe Revolutions; and while we cannot deny that the like diurnal Revolution of the Earth, would regularly produce a correſpondent regular Succeſſion of Day and Night in 24 Hours with us, without the introduction of any farther Motions of the Heavens for this purpoſe; what Confuſion, I ſay, is it after all this, for us to introduce a ſtrange, a violent, an unexampled, an unphiloſophical Circumgyration of the whole vaſt Univerſe about our poor Earth, every Day, to the diſorder and perplexity of thoſe other diurnal Appearances, and of the whole Syſtem? and all this without any juſt occaſion in the World? If we were but for a while tranſlated to *Jupiter*, which we know to have the quickeſt diurnal Revolution of all the reſt, and obſerv'd how regular the riſing and ſetting of the Sun, Moon, and Stars, appear'd therein from that diurnal Motion alone, I dare ſay we ſhould never after that ſo much as dream of any other than a diurnal Motion of our Earth, to account for the like riſing and ſetting of the ſame Sun, Moon, and Stars with us here upon Earth.

(6.) In Fact, our Earth certainly has ſuch a diurnal Revolution about its own Axis, as we

are now ſpeaking of: For though we do not ſtand conveniently enough to *ſee* the diurnal Revolution as to our own Earth, which we do as to the other Heavenly Bodies; yet are we capable of certainly knowing by one grand Effect of ſuch a Motion, whether our Earth has that Motion or not? All Globes which have no diurnal Revolutions about their own Axes, muſt, by the Equality of the weight of Bodies in all their Regions, be perfect *Spheres*; and all the Parts of their Surface muſt, generally ſpeaking, be at the ſame diſtance from the Center. But all Globes that have ſuch a diurnal Rotation, (which will neceſſarily be ſwifteſt at the Equator, and by conſequence will cauſe the Parts to recede from the Axis of Motion, chiefly near the Equator) will be *Oblate Sphæroids*, or higher in the Equatoreal, and lower in the Polar Regions, as has been already obſerv'd. Now to this certain κριτήριον do we appeal for the determination of this matter. For ſince it appears from the leſſer length of the Pendulum which vibrates Seconds near the Equator, than near the Pole; that the Surface of the Earth is about 31 Miles higher at the Equator, than at the Poles; and ſince the regreſs of the Earth's Nodes, which we call the preceſſion of the Equinox, with the Equilibration of the Waters near the Equator, and near the Poles, do both fully confirm the ſame thing; all which are the neceſſary Effects of the Earth's diurnal Rotation, and are accountable on no other Principles whatſoever; I conclude, that our Earth has ſuch a diurnal Rotation; or, which is the ſame thing, that the diurnal Revolution belongs to the Earth, and not to the Heavens.

See Sir Iſaac Newton's Princip. 2d. Edit. p. 337, 338, *and* p. 437, 438.

N. B. I

N. B. I propoſe the Five firſt as Arguments exceeding probable; but this laſt as a really certain Demonſtration.

PROP. II.

The *Annual Motion*, or that which occaſions the Succeſſion of Summer and Winter, and the apparent Motion of the Sun through the Ecliptick, in the ſpace of 365¼ Days, which we call a *Year*, belongs to the Earth, and not to the Sun.

DEMONSTRATION.

(1.) All the Phænomena or Appearances relating to this Matter, are now certainly known to be equally natural and neceſſary Conſequences of an Annual Revolution of the Earth, as of the Sun; as all Aſtronomers confeſs. And he who conſiders the prodigious Greatneſs of the Sun's Body, and the comparative Smallneſs of the Earth, will be under no Temptation to ſuppoſe that the vaſt Sun revolves round this little Earth; eſpecially when he reflects, that all things will be the very ſame, if this little Earth be ſuppos'd to revolve about that vaſt Sun in the ſame time.

(2.) There are no known Laws of Motion according to which ſo great a Body as the Sun, can revolve about ſo ſmall a Body as the Earth; nay, this is directly contrary to all ſuch known Laws whatſoever. For let the Occaſion or Influence derived from theſe two Bodies be of what ſort you pleaſe, either Gravitation, or Magnetiſm, or Impulſe, *&c.* ſtill the greater

Body, as in all like Caſes, muſt have the greateſt Force and Efficacy to move the other. And we may full as well expect that a Sling, containing a Milſtone in it, may be faſten'd to a Pebble, and continue its motion about that Pebble, without removing it, as that the Sun can revolve about our Earth, while the Earth continues immoveable in the Center of that Motion.

(3). There is no Inſtance of ſuch a thing in the viſible World, as a great Body thus revolving about a ſmall one, that continues it ſelf immoveable all the while; but all the Inſtances are on the other ſide. The ſmaller Moon revolves about the larger Earth; the ſmaller Circumjovials and Circumſaturnals revolve about the larger *Jupiter* and *Saturn*; *Saturn*, *Jupiter*, *Mars*, *Venus*, and *Mercury*, revolve all, not about the ſmaller Earth, but about the larger Sun; as is now confeſs'd by the whole Aſtronomical World; and as is certainly demonſtrated by the Phaſes of *Venus* and *Mercury* ſeen through a Teleſcope. And tho' in a ſtrict ſenſe all theſe larger Bodies may be ſo far ſaid to revolve about thoſe ſmaller, as they may ſtill, on both ſides, revolve about the common Center of Gravity; yet becauſe the common Center of Gravity of the Sun and Earth muſt be ſo very near the Center of the Sun, and ſo very far from the Center of the Earth; and by Conſequence, the Motion of the Sun, if compar'd with that of the Earth about it, muſt be ſo very inſenſible; it follows, that the moſt ſenſible Annual Motion, of which we are now ſpeaking, muſt ſtill, by all parallel Inſtances, belong to the Earth, and not to the Sun.

See Fig. I.

(4.) The

The Copernican, or true Solar System . *Pag.* 34.

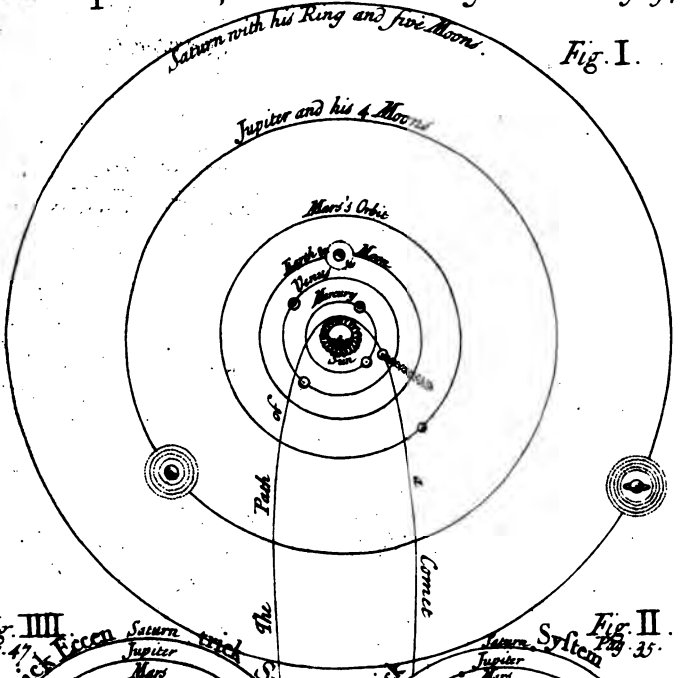
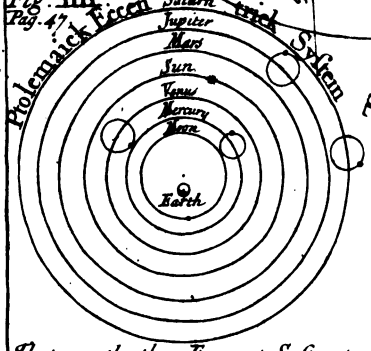


Fig. I.

Fig. III. *Pag.* 47.



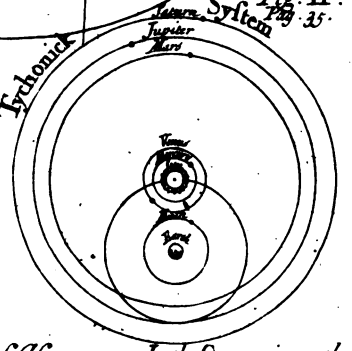
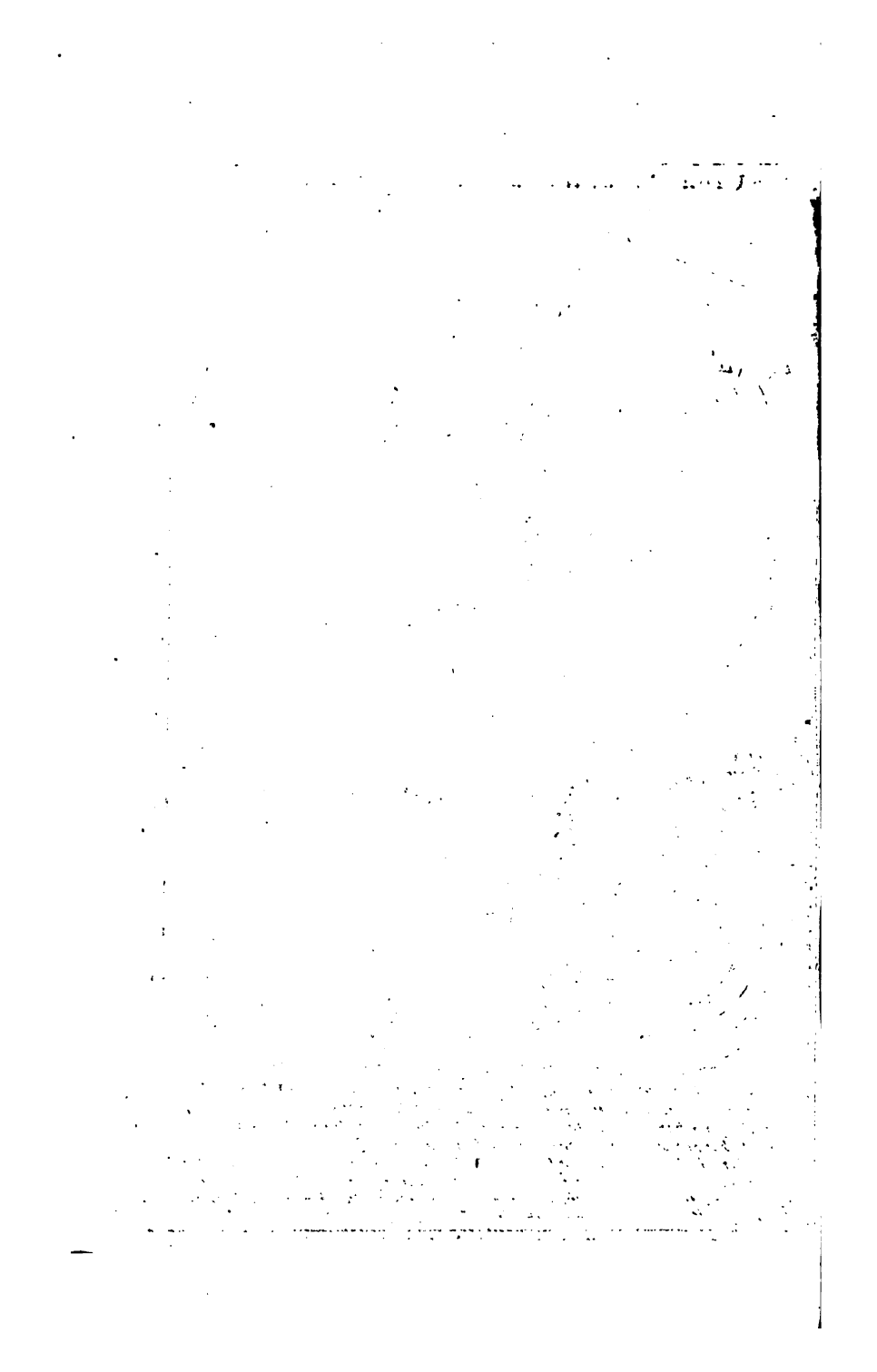


Fig. II. *Pag.* 35.

These are the three Famous Systems of Astronomy. In the Copernican *the the Phases of Venus and Mercury, which are Full in one Conjunction with the Sun, when they are beyond it as to the Earth, Demonstrate that the* Ptolemaick *System in which that situation is impossible, is utterly false.*
Nor is there the least evidence in the World for the Tychonick: *which the very Figure shews to be absurd and Monstrous: That the Vast Sun, with its Prodigious System of the Planets, should be as in the Copernican; and yet that this System of the Sun and Planets should all Revolve round this little Earth in a Years time!*

I. Senex Sculp:

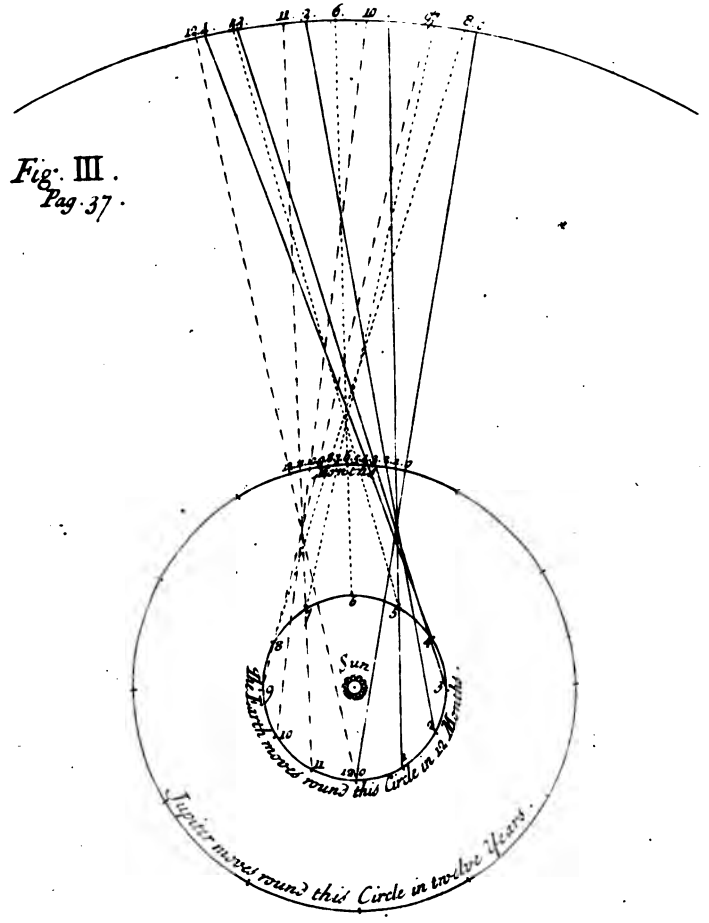


(4.) The Hypotheſis that this Annual Motion belongs to the Sun, and not to the Earth, introduces the utmoſt Confuſion among the Celeſtial Motions, and that without any proper occaſion in the World. For what ſtrange confuſion is it for us to imagine that the ſingle Earth, which is now confeſs'd by all to be ſituate between *Mars* above, and *Venus* below it; while all the reſt of the Planets, *Saturn* with his *Satellites*, *Jupiter* with his, and *Mars*, *Venus*, and *Mercury*, without any, do all revolve not about the Earth, but about the Sun; nay that the Superior revolve about it in longer, and the Inferior in ſhorter Periods or Years, while the Annual Period, is in a mean between them; that I ſay the ſingle Earth be exempted from the common Law of the whole Syſtem? What a heap of Abſurdities are here? That while all the reſt of the Planetary World revolves about the Sun, in their ſeveral regular Periods or Years, that yet our Earth, contrary to all Probability, ſhould be ſuppos'd to carry not the Sun only, but all the Solar Syſtem alſo round it ſelf in in a Year's time, as it certainly muſt, if the Annual Motion belong to the Sun? *See Fig.* II. This Hypotheſis of the famous *Tycho*, which is the only one that is not abſolutely impoſſible to be true, is yet ſo wild, groundleſs, and extravagant in it ſelf, and ſo prodigiouſly improbable, that I ſhould exceedingly wonder at its firſt Introduction, and much more at its Admiſſion ſtill in *Roman-Catholick* Countries, did I not know that Injudicious Perſons have interpreted Scripture againſt the true Syſtem; and that an *Infallible Church* has Eſtabliſh'd that Interpretation; nay, has condemn'd the true one

as Hereſy; and that, by Conſequence, the Popiſh Aſtronomers have been driven into this terrible Dilemma, of either ſubmitting to the Abſurdities of the *Tychonian*, or elſe of reſigning themſelves up to Impriſonment, if not to Death it ſelf for the true or *Copernican Hypotheſis*: So dangerous is it, in that Church at leaſt, if not in ſome others, to admit of Truth not only in Divine, but even in Natural and Aſtronomical Matters alſo!

(5.) There is one known fixed Proportion between the Periods and Diſtances of all the Heavenly Bodies from the Sun; I mean that the Squares of the Periods, are ever as the Cubes of the Diſtances; and this Proportion is ſo univerſal, that it obtains not only in this general Syſtem of the Primary Planets about the Sun, but in the particular Syſtems of the Secondary Planets about their Primaries, without the leaſt Exception that we know of in the Univerſe: Which Proportion demonſtrates, that the Annual Revolution belongs to the Earth, and not to the Sun. For as the Cube of the Moon's diſtance, which is 240,000 Miles, to the Cube of the Sun's diſtance, which is 81,000.000 Miles, *i, e.* as 1 to 38,272.753, ſo is the Square of the Moon's Period, or of leſs than 28 Days, which is about 784, to the Square of the Period of any Body moving about the Earth at the Sun's diſtance in Days, or to 30,005.838,352, whoſe Square Root, or 173,510 are therefore the Number of Days of the Solar Year, in caſe the Sun revolves about the Earth; which yet in reality are known to be but $365\frac{1}{4}$. Now this laſt Number is con-
in'd no leſs than 475 Times in the former.
that if the Sun revolv'd about the Earth, from
that

Fig. III.
Pag. 37.



This Plate truly represents the Direction, Station, *and* Retrogradation *of the Superior Planets, by the Situation of the Earth and Jupiter, one of those Planets, during a whole Years motion of the One, and a Months motion of the Other; from their first Position at 1.1.1. when Jupiter appears Direct, and near the Conjunction; at 2.2.2. and 3.3.3 when it continues Direct, tho' more slow in its motion; about 4.4.4. when it is Stationary; at 5.5.5 when it appears Retrograde, as also at 6.6.6 (when it is in Opposition) and 7.7.7; till about 8.8.8 it is Stationary again: After which at 9.9.9 and 10.10.10 it becomes Direct again, and more swiftly so at 11.11.11 and 12.12.12. The Case of* Saturn *and* Mars *are much the same.*

I. Senex Sculp.

that Analogy and Harmony which is every where elſe obſerved in the Heavens, the Year muſt be 475 Times as long as it now is. This Calculation ſeems to me to determine this Diſpute in favour of the *Copernican* Syſtem; according to which, the Proportion above-mentioned of the Cubes of the Diſtances, as the Squares of the Periodick Times, is known to agree to all the Planets, to the utmoſt exactneſs of Aſtronomical Obſervations.

(6.) In Fact, the Earth has ſuch an Annual Revolution about the Sun; as appears by all the Indications of ſuch a Motion poſſible: even by that of Parallax; which is the known Geometrical Foundation of the Science of Aſtronomy. Thus if the Earth have an Annual Revolution about the Sun, it muſt affect the apparent Motions of all the other Planets and Comets, and, notwithſtanding the Regularity of their ſeveral Motions in their own Orbits, muſt render the regular Motions, as to us, living upon the moving Earth, ſometimes Direct, and that ſwiftly or ſlowly; ſometimes Stationary, and ſometimes Retrograde, and that ſwiftly or ſlowly alſo; and all this at ſuch certain Periods, in ſuch certain Places, for ſuch certain Durations, and according to ſuch certain Circumſtances, as Geometry and Arithmetick will exactly determine, and not otherwiſe. Now that this is the real Caſe in Fact; and that every one of theſe Particulars are true in the Aſtronomical World, all that are skilful in that Science do freely confeſs; even thoſe who, for Reaſons already hinted at, do not think fit to declare openly for this Annual Revolution of the Earth, which is the natural, the certain Conſequent of that Conceſſion. *See Fig.* III.

'Tis true, ſuch Perſons may pretend, that tho' theſe Phænomena be undoubted; and would be the undoubted Effects of ſuch a Motion; yet that this Annual Revolution is not the undeniable, the ſtrictly Geometrical Conſequence of them; that they *may poſſibly* be accounted for on other Hypotheſes, and that on the Suppoſition of certain complex Motions, deriv'd from (imaginary) Epicycles, and Eccentricks, and ſolid Orbs, *&c.* they may be ſolved without the introduction of this Annual Motion of the Earth. Now this I do not abſolutely deny, that if ſuch precarious, aukward, immechanical, falſe, and abſurd Figments, were the true and real Laws of Nature, theſe Phænomena *might* poſſibly be otherwiſe accounted for: But then I affirm, that ſuch Hypotheſes are indeed not at all the real Laws of Nature, but no better than meer precarious, aukward, immechanical, falſe, and abſurd Figments only; ſuch indeed, as if they were allow'd in other Caſes, would take away all Certainty in all mixt Mathematicks at leaſt, if not in Arithmetick and Geometry themſelves; and would enable Men to evade the grand Foundation of Aſtronomy, I mean that of the common Parallax it ſelf: Theſe Phænomena being as truly Inſtances of an Annual, as other known ones are of the Diurnal Parallax. I believe the skilful Aſtronomers will know my meaning by this general intimation; but if not, I will eaſily undertake to demonſtrate, that thoſe who, notwithſtanding theſe Indications, or Demonſtrations, do deny or doubt of the Earth's Annual Motion, may, in Conſequence thereof, become Aſtronomical Scepticks, and deny, or doubt of almoſt all the other Principles of Aſtronomy,

and

and of Human Knowledge, which are never paſt the Evaſions of reſolved Scepticks. But I need not here enlarge, becauſe I am well aſſur'd that all Aſtronomers, who are compleat Maſters of that Science, as ſoon as other Prejudices and Fears are over, will agree with me, that the Arguments under this Head, when allow'd their free and full Weight, do certainly prove that this Annual Revolution belongs to the Earth, and not to the Sun. I do not here mention that Annual Parallax of the *Fixed Stars*, which Dr. *Hook* and Mr. *Flamſteed* think they have diſcovered, which would certainly *demonſtrate* the Earth's Annual Motion, and which I have elſewhere vindicated from the Objections of Dr. *Gregory*, and of the *French*; becauſe it is not yet generally allow'd for true by the Learned. Nor need I have recourſe to that Attempt: ſince the moſt evident Annual Parallax of the Planets and Comets, already inſiſted on, does plainly prove this Annual Motion of the Earth.

See Aſtron. Lect. IV. And Math. Philoſophy. Lect. XXI.

N. B. The Reader will eaſily perceive, that I propoſe the former Five Arguments as highly probable, but this laſt as a certain Demonſtration of the Annual Motion of the Earth.

N. B. I do not here meddle with the ſeveral Objections made formerly againſt either the Diurnal or Annual Revolutions of the Earth, either from Scripture or from Nature; ſince there are few of the truly Learned and Judicious which do now inſiſt upon them; and ſince they have been fully conſider'd and confuted by others, in treating on this Argument; to whom I ſhall refer

See Galileo's *Syſt. Coſmic.* *Mr.* Derham's *Aſtrol. Theol. Pref.*

refer the Reader, if he ſtill want Satisfaction therein.

PROP. III.

(1.) There is an univerſal *Power of Gravity* acting in the whole Syſtem; whereby every Body, and part of a Body, Attracts and is Attracted by every other Body and part of a Body, through the whole Syſtem. (2.) This Power of Gravity is greater in greater Bodies, and leſſer in leſſer; and that in the proportion of ſuch their Magnitude. (3.) It is alſo greater when the Bodies are nearer, and leſſer when they are farther off, and that in the exact duplicate proportion of ſuch their nearneſs. (4.) This Power is the ſame in all Places, and at all Times, and with regard to all Bodies whatſoever: (5.) This Power is entirely immechanical, and beyond the Abilities of all material Agents whatſoever.

Demonſtration *of the* firſt Part; *That there is ſuch a Power of* Gravity *in the Univerſe.*

(1.) Becauſe all the Planets, Primary and Secondary, with the Comets, are perpetually drawn from their natural Rectilinear Courſes along ſtrait Lines, the Tangents of their preſent Orbits, and made to revolve in Curves; there is therefore a continual Power or Force acting upon them; and becauſe the Power or Force acts ſo upon them, as to cauſe the Bodies to move juſt ſo much quicker, as they are nearer their Central Bodies; and juſt ſo much ſlower, as they are farther off them; and thereby to oblige them by a Line drawn from the Central

tral Bodies ever to deſcribe equal Area's in equal Times; it therefore follows, by Geometrick Demonſtration, that this Power or Force always tends directly to the Centers of thoſe Bodies about which they revolve; or is ſtill a Centripetal Power or Force, with regard to the ſame Bodies. *See* Math. Philoſ. *Prop.* 16.

(2.) This Power or Force is properly the Power or Force of *Gravity*, or the very ſame which cauſes Stones and all heavy Bodies with us to *gravitate*, and thereby to deſcend downward towards the Earth's Center; becauſe upon exact Geometrick Deduction, and Arithmetick Calculation it appears, that the Force which retains the Moon in its Orbit, tends to the ſame Center, and is exactly of the ſame Quantity with that, which accelerates heavy Bodies with us on the Earth's Surface; due Allowance being made for the Difference of their Diſtances from the Earth: which Force cauſes all Bodies whatſoever on the Earth's Surface to deſcend a little more than 16 *Engliſh* Feet, in one Second of Time. *See* Math. Philoſ. *Prop.* 79.

Demonſtration *of the* Second Part, *that this Gravity is exactly proportional to the Magnitude of the Central Body.*

(1.) Becauſe the Heavenly Bodies are all Spherical, and the Force of Gravity tends ſtill directly to their ſeveral Centers, that Force, by Geometrical Demonſtration, is the very ſame as if it tended to every Particle of thoſe Central Bodies, and as if the Gravity to each whole Central Body were compos'd of the Gravity to each *See* Math. Philoſ. *Prop.* 45.

each Part of the ſame; which indeed is the only rational Conception of this Matter; becauſe otherwiſe this Force muſt reſpect not a Body, which is ſomewhat real, but a Mathematical Point, which, phyſically ſpeaking, is nothing at all.

(2.) In Fact, the greateſt Bodies have the greateſt Gravity towards them through the whole Univerſe. Thus by Calculation from the Heavenly Motions it appears, that the vaſtly greateſt Force of Gravity is that tending to the *Sun*, the next that to *Jupiter*, the next that to *Saturn*, the next that to the *Earth*, and the next that to the *Moon*; according to the known Order of the Magnitude of their ſeveral Bodies reſpectively. Nor do I omit the other Planets and the Comets here, as if the Caſe were not the ſame in them alſo; but becauſe they have no Planets, that we know of, moving about them; and becauſe they occaſion no ſenſible Tides in our Ocean; which are the only Phænomena, whence we can draw any certain Indications of the Quantity of that Power of Gravity which tends to them.

See Math. Philoſ. *Prop.* 84.

Demonſtration *of the* Third Part; *that this Gravity is exactly in the Duplicate Proportion of the Nearneſs of Bodies*, i. e. *when twice as near, four Times; when thrice as near, nine Times; when four times as near, ſixteen Times as ſtrong; and ſo for ever.*

(1.) Becauſe the Cubes of the Diſtances of the ſeveral primary Planets about the *Sun*, and of

of the ſeveral Secondary Ones about their Primaries, are ſtill found to bear accurately the ſame Proportion to each other, which the Squares of their reſpective Periodical Times of Revolving alſo bear; it follows, by ſtrict Geometrick Reaſoning, that the Centripetal Force, which keeps them in their ſeveral Curves, is accurately in the duplicate Proportion of their Nearneſs to their Central Bodies. *See* Math. Philoſ. *Prop.* 13.

(2.) Becauſe all the primary Planets and Comets revolve about the *Sun*, and all the ſecondary Ones, that are Eccentrical, about their Primaries in Ellipſes, or Conick Sections, and that about the *Sun*, or their Primaries, ſituate in their *Foci*; it follows, by ſtrict Geometrick Reaſoning, that the Centripetal Force, which retains them in ſuch Conick Sections, is exactly in the duplicate Proportion of their nearneſs to their Central Bodies. *See* Math. Philoſ. *Prop.* 21.

(3.) Becauſe the *Aphelia*, or longer Axes of theſe Ellipſes do reſt, as to the fixed Stars, in the primary Planets and Comets; and in the ſecondary Ones, do move only in proportion to the diſturbance they neceſſarily meet with from the Inequality of their Diſtances from the *Sun*, it follows from Mathematick Reaſoning, that the Centripetal Force, which acts upon thoſe Planets and Comets, is moſt accurately in the duplicate Proportion of their Nearneſs to their Central Bodies. *See* Math. Philoſ. *Prop.* 33.

N. B. That there appears no manner of Neceſſity for this Proportion of Increaſe and Diminution of the Power of Gravity, as the Squares of the Nearneſs of Bodies more, than for any other Proportion; as ſuppoſe that of the

the Nearneſs it ſelf, or that of the Cubes, or Biquadrates, *&c.* of that Nearneſs or Diſtance. Yet would any other Proportion have been exceeding inconvenient for this Syſtem. For if it had been as the Nearneſs it ſelf, we have no regular Curve Line, in which the Eccentrical Planets or Comets could then revolve: If in a Tripticate ſuch Bodies muſt ever have deſcended, or aſcended in Spiral Lines, till they fell into the Sun, or ſome Fixed Star, and periſhed therein. And if the Proportion had been ſtill greater, the Effect would have been quicker alſo.

See Math. Philoſ. *Prop.* 20.

Demonſtration *of the* Fourth Part; *that this Gravity is the ſame in all Places, and at all Times, and with regard to all Bodies whatſoever.*

This is plain from Fact and Obſervation; for (1.) Heavy Bodies fall as faſt in one Country as in another; and Gravity affects the Planets and Comets in its proper Proportion, equally in all the Parts of the Univerſe where Planets or Comets go, *i. e.* in all the immenſe Regions of it every Way.

(2.) The Planets and Comets, guided by this Law, have invariably preſerv'd their Motions, Orbits, Periods, and Influences, ſince the firſt Ages of Aſtronomy and Chronology: And,

(3.) This Gravity does ſtill, upon Tryal, equally affect Fluids and Solids; Bodies in Motion and at Reſt; Great and Small; and this through the whole Univerſe alſo, ſo far as we can examine it.

Demon-

Demonſtration *of the* Fifth Part ; *that this Gravity is an entirely Immechanical Power, and beyond the Abilities of all material Agents whatſoever.*

(1.) This Power acts upon the very inward ſubſtantial Parts of Bodies, as well as the outward and viſible ; and is proportionable not to the Surface but to the ſolid Content, or Quantity of Matter contained in them : Whereas, all Mechanical Cauſes are meerly ſuperficial, and act by External Contact on the External Surface only. *See* Math. Philoſ. *Prop.* 82.

(2.) This Power acts upon Bodies equally, when they are in the moſt violent Motion, and when they are at Reſt ; as the Celerity of Deſcending Bodies with us, and the Celerity of the Comets in the Heavens, Geometrically computed, do particularly ſhew. Now this is abſolutely impoſſible ; that any Mechanical Preſſure, or Impulſe from a Body, let its Motion be never ſo ſwift, or its Preſſure never ſo ſtrong, ſhould equally accelerate another Body, when at Reſt, and when in Motion ; it being a known Law of Mechaniſm, that a Body in Motion impels another at Reſt with its whole Force ; but one in Motion, with only the Exceſs of its own Velocity above the others ; as is moſt obvious alſo on the leaſt Reflexion. *See* Math. Philoſ. *Prop.* 3. *See* Math. Philoſ. Law of Motion 6, *&c.*

(3.) By this Power Bodies act upon other Bodies *at a Diſtance*, nay at all Diſtances whatſoever ; that is, they *act where they are not* : Which is not only impoſſible for Bodies Mecha-

nically to do, but indeed is impoſſible for all Beings whatſoever to do, either Mechanically or Immechanically, it being juſt as good Senſe to ſay, an Agent can act *when* he is not in Being, as *where* he is not preſent. Whence, by the way, as we ſhall ſee hereafter, it will appear, that this Power of Gravity is not only Immechanical, or does not ariſe from Corporeal Contact or Impulſe, but is not, ſtrictly ſpeaking, any Power belonging to Body or Matter at all; tho' for eaſe of Conception and Calculation we uſually ſo ſpeak; but is a Power of a ſuperior Agent, ever moving all Bodies after ſuch a manner, as if every Body did Attract, and were Attracted by every other Body in the Univerſe, and no otherwiſe.

N. B. Altho' I here do only inſiſt in particular on the wonderful Power of Gravity, which is the general or univerſal Power of the entire Syſtem; and which is the beſt known, the moſt eaſily proved, and is indeed the moſt evidently Immechanical; yet do not I exclude thoſe other Noble and Immechanical Powers of Refraction in pellucid Bodies; of mutual Repulſe in the Particles of the Air, which render it Elaſtical; of the Coheſion of Parts in conſiſtent Bodies, and of another Kind of Attraction in homogenial, and of Repulſe in heterogeneous Fluids, *&c.* on which the particular Phænomena of Nature do now appear to depend; but ſhall upon Occaſion make uſe of them ſometimes in what follows.

PROP.

PROP. IV.

The Orbits, Revolutions, Diſtances, Diameters, Quantities of Matter, Denſities, Gravity on the Surfaces, Revolutions about their Axes, Quantities of Light and Heat, above ſet down, concerning the Sun and Planets, both primary and ſecondary, with thoſe of the Comets alſo, are True and Certain. With an Account of the Ways whereby we diſcover all thoſe Particulars.

Demonſtration of the ſeveral Particulars.

(1.) That the *Orbits* of all the primary Planets are, as above ſtated, *Elliptical*, was firſt diſcovered, and prov'd with the utmoſt Labour and Induſtry, from *Tycho*'s Obſervations, by the famous *Kepler*; particularly as to the Planet *Mars*; and is now diſcover'd by the great Exactneſs of all the Planets Places, and apparent Diameters, when calculated in ſuch Orbits, and compared with the beſt Obſervations. Nor was the old Hypotheſis of the *Eccentrick Circular Orbits*, other than an Approximation to the true *Syſtem*; eſpecially when the Aſtronomers came to obſerve, that their Circular Eccentricity would not agree to Obſervation, without its *Biſection*, as it was call'd; *i. e.* without ſuppoſing the Point of even equable Motion to be as far *beyond*, as the Eccentrical Point was on *this ſide* the Center of the Circle, which was almoſt the ſame Thing with owning ſuch Orbits to be Elliptical, and having the Sun in the Inferior,

De Motibus Stellæ Martis.

See Fig. IV.

rior, and the Point of even Motion in or very near the ſuperior Focus; which is the State of thoſe Orbits in our preſent Aſtronomy. And the Caſe will be the ſame as to the Orbits of the Secondary Ones about their Primaries, where-ever their Eccentricity can be diſcover'd. Nor is the State of the Comets to be excepted from this Rule: For tho' We now generally uſe Parabolick inſtead of Elliptick Orbits in the Computation of the Comets Motions, yet is this only for that ſmall part of their Courſe which we can ſee, and for the eaſe of Calculation; while we are ſatisfy'd from their Appearances, that they really move in very Oblong Ellipſes, (or ſuch as approach to Parabola's,) about the Sun in their lower *Foci*, as do the Planets; that accordingly they have their proper Periods, in which they revolve quite round, and return to the Sun again; three of which Periods are now diſcovered; that if we compute them in Ellipſes, inſtead of Parabola's, where-ever the Species of thoſe Ellipſes are known, we ſhould find our Calculations ſtill more exactly to agree with our Obſervations, as is already the Caſe as to the Comet 1682.

See Math. Philoſ. of Comets, *P.* 381, *&c.*

(2.) The *Revolutions* of the primary Planets about the Sun, and of the Secondary Ones about their Primaries are above by me thus ſtated.

Mer-

		D.	H.	′.
Mercury	revolves	87	23	16
Venus	about the	224	16	49
The Earth	Sun in	365	6	9
Mars	the Space	686	23	27
Jupiter	of	4332	12	20
Saturn		10759	6	36

Circumjovials.

		D.	H.	′.
The Innermoſt	revolves a-	1	18	28
The Second	bout *Jupi-*	3	13	14
The Third	*ter* in the	7	3	43
The Fourth	Space of	16	16	32

Circumſaturnals.

		D.	H.	′.
The Innermoſt	revolves	1	21	19
The Second	about *Sa-*	2	17	41
The Third	*turn* in	4	13	47
The Fourth	the Space	15	22	41
The Fifth	of	79	22	4

The Moon revolves round the Earth, from any fixed Star, to the ſame again, in	27	7	43
From the Sun to the Sun again, in —— ——	29	12	44

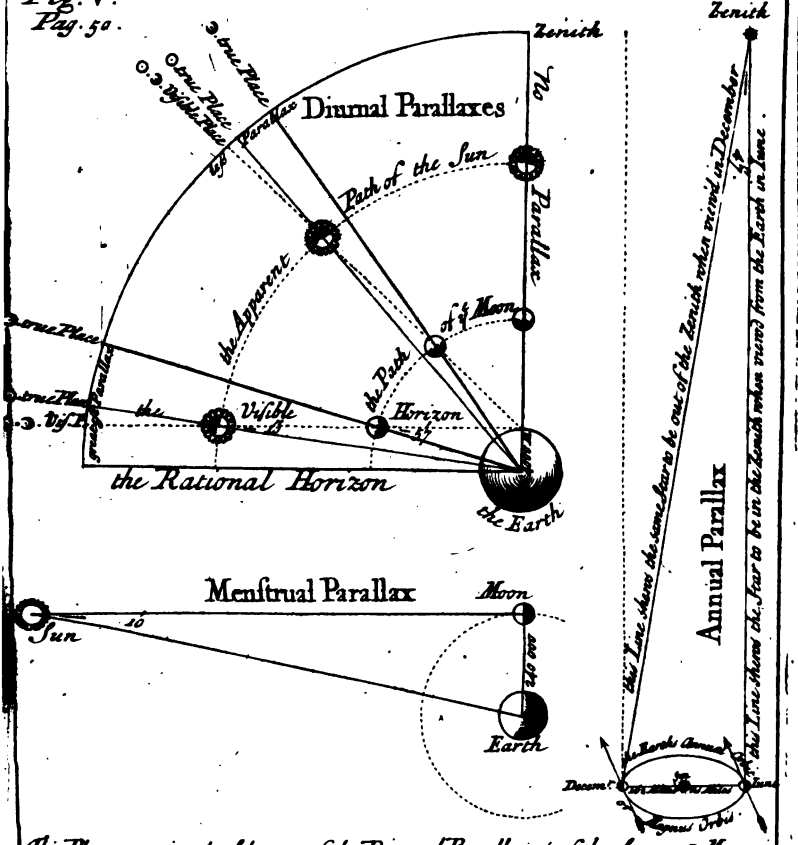
	Y.	M.	D.
Firſt of the Three Comets revolves in —— ——	75	0	0
Second, —— ——	129	0	0
Third, —— ——	575	0	0

This is plain and direct Matter of Obſervation; and depends only on the Compariſon of the former Places of Planets noted by Aſtronomers, to the fixed Stars, to the Sun, or to their Primaries, with the latter; and the eaſy Computation of the Number of Years, Days, Hours, and Minutes, between ſuch Obſervations. Thus, for Inſtance, we firſt know, by groſs Obſervation, that the Moon is above 27 Days in revolving round us, from any fixed Star to the ſame again; we then compare ſeveral Months at once, and find that in 12 Months one with another, the Moon is almoſt Eight Hours above 27 Days in ſuch a Revolution. And then, laſtly, we compare the like Revolutions for many Years together, and ſo diſcover that juſt 27 Days, 7 Hours, and 43 Minutes, is its true Periodical Time.

See Fig. *N. B.* The ordinary or Diurnal Parallax of any Celeſtial Body, is the ſmall Angle that is made in a plain Triangle compoſed of Three ſtrait Lines; the One from the Center of the Body, to a Spectator on the Earth's Surface: The Second from that Center to the Earth's Center: The Third from the Spectator to the Earth's Center; or that Angle which is ever over againſt the Earth's Semidiameter. And further,

N. B. If the Reader be unacquainted with plain Trigonometry, he is to obſerve, that in every plain Triangle, if Two Angles be known, the Third is of Courſe known; and the *Proportion* of the Sides is known alſo: This he may try himſelf in any Triangles equiangular to one another, and may, by meaſuring the Sides, ſee that their *Proportion* is perpetually the ſame.

Fig. V.
Pag. 50.



This Plate contains the Schemes of the Diurnal Parallaxes of the Sun and Moon; the Menstrual Parallax of the Sun; and the Annual of a Fixed Star in the Zenith: The last Peculiar to our Famous D^r. Hook and M. Flamsteed.
It exhibits the Parallactick Triangle in every Case: And in the Diurnal Parallaxes of the Sun and Moon in their Greatest quantity at the Horizon, their Mean quantity at a considerable elevation above the Horizon, and their vanishing away to Nothing at the Zenith. The Greatest Angle of Parallax is here still set down according to its real quantity, found by Observation; the Diurnal of the Moon 57. of the Sun 10, The Menstrual of the Sun about 10. and the Annual of the Fixed Star about 47.
The time of the Menstrual Parallax is only at the Quadrature of the Moon, when the limit dividing the Light and Dark part appears a right line.
The Triangle of the Diurnal Parallaxes will give the Distances of the Moon 60 Semidiameters of the Earth or 240,000 Miles; of the Sun 20000 Semidiameters or 82,000,000 Miles, equal to the Menstrual of 337 times the distance of the Moon: That of the Annual 4300 times the Diameter of the Earths Orbit or, 700,000,000,000 Miles.

I. Senex Sculpt.

(3.) The real mean *Diſtances* of the Primary Planets, and the known Comets, from the Sun, as alſo of the Secondaries from their Primaries, have been by me thus determined.

Mercury	is diſtant from the *Sun's* Center about	32,000.000	Statute Miles; each 5280 *Engliſh*, and 4949 *French* Feet.
Venus		59,000.000	
The *Earth*		81,000.000	
Mar's		123,000.000	
Jupiter		424,000.000	
Saturn		777,000.000	
Neareſt of the 3 Comets		1.458,000.000	
Middlemoſt		2.025,000.000	
Outmoſt		6.600,000.000	

Circumjovials.

The Innermoſt	is diſtant from the Center of *Jupiter* ab^{t}	~~2,300.000~~ 290.000	Miles.
The Second		368.000	
The Third		580.000	
The Fourth		1,000.000	

Circumſaturnals.

The Innermoſt	is diſtant from the Center of *Saturn* ab^{t}.	146.000	Miles.
The Second		187.000	
The Third		263.000	
The Fourth		600.000	
The Fifth		1,800.000	

The Moon { is diſtant from the Earth's Center about } 240.000 { Miles.

Theſe Diſtances, as to their Proportion, are well known from plain Trigonometry; I mean, by the utmoſt Elongation of the Inferiors; where in a Rectangular Triangle, joining the Eye, the Center of the Sun, and the Center of the Planet, two of the Sides bear this Proportion to each other: And by the Angle of Retrogradation, thereto equivalent, in the Superiors; for 'tis but imagining your Eye, transferr'd to the Superior Planet, and the Earth is an Inferior one with reſpect to the Eye, and the Proportion as before is given; as alſo by the Poſition of *Jupiter*'s Shadow, in the Eclipſes of its *Satellits*, where the Middle of the Eclipſe gives the Poſition of the Central Shadow of *Jupiter* from the Sun; and our Inſtruments give the Poſition hence: So that we have all the Angles in a plain Triangle made by the Center of the Sun, the Center of *Jupiter*'s Shadow, and the Eye, which gives the Proportion of the Sides or of the Diſtances; and by the Proportion of the Periodick Times, compar'd with the mean Diſtances in the Comets, all which Methods agree together in the preſent Caſe. And as to the Diſtances in Miles themſelves, they are derived from the beſt Obſervations of the Parallax of *Mars* and *Venus*, by Mr. *Flamſteed*, *Caſſini*, and others, which give us that of the Sun about 10", and which is followed by Sir *Iſaac Newton* in the ſecond Edition of his *Principia*. Only we may Note, that this Parallax cannot be much

much larger, becauſe that would eaſily be diſcover'd by our Inſtruments, but may be a little leſs, becauſe that is more difficult to be found out. So that it is more probable that theſe Diſtances are ſomewhat too little, than that they are at all too great. But as to ſuch farther Exactneſs, it muſt be left to the niceſt Obſervations of Poſterity. Nor will it be at all difficult in that Caſe to ſettle more exact Numbers for theſe Diſtances before us; *viz.* thoſe in the reciprocal Proportion to that Parallax.

Corollary. From theſe two Tables compar'd together, we learn the Mean Annual Horary Velocities of the Primary Planets, and of the Three Comets about the Sun, and of the Secondaries about their Primaries; as follows:

Mercury	moves in the Space of one Hour about	100.000	Miles.
Venus		70.000	
The *Earth*		56.000	
Mars		45.000	
Jupiter		24.000	
Saturn		18.000	
Neareſt of the 3 Comets		13.000	
Middlemoſt		9.000	
Outmoſt		6.000	

N. B. Light moves about 650,000.000 Miles in an Hour; 10,800.000 in a Minute; and about 180.000 in a ſecond of Time.

Circumjovials.

The Innermoſt	moves in the	82.700	Miles.
The Second	Space of	25.700	
The Third	one Hour	20.000	
The Fourth	about	15.000	

Circumſaturnals.

The Innermoſt	moves in the	19.400	Miles.
The Second	Space of one	18.500	
The Third	Hour about	14.300	
The Fourth		9.400	
The Fifth		5.600	

The Moon	moves in the Space of one Hour about	2.200	Miles.

(4.) The real *Diameters* of the Heavenly Bodies have been by me thus determined, in *Engliſh* Statute Miles, according to Mr. *Flamſteed*'s Obſervations.

The Sun's - -	763.000
Saturn's - - -	61.000
Jupiter's - - -	81.000
Mars's - - -	4.440
The Earth's - -	7.970
The Moon's - -	2.170
Venus's - - -	7.900
Mercury's - -	4.240

Theſe

These Numbers, which are discover'd by the apparent Diameters, compared with their real Distances, are as to the Earth and Moon, within a small Latitude, certainly true in the *Miles themselves*; and as to the rest, are within no great Latitude certainly true, in the *Proportion* of one to another; but not so certain as to the Miles themselves. The Reason is plain, that the real Bigness of the Earth, and of our Neighbour the Moon, are easily discover'd, and measur'd by the Rules of Astronomers; but that the rest are so vastly remote from us, that our nicest Instruments cannot yet perfectly define the *Distances* of any of them; and so by Consequence cannot perfectly determine their real *Diameters*, which depend thereon. Only so far I may, as before, venture to conjecture, that the real Distances and Diameters are rather larger than smaller than those here set down; because if the Distances, and so the Diameters, were much less, they would be certainly discover'd by our Instruments; whereas if they be suppos'd considerably greater, it must be still harder to discover those Distances and Diameters by the same Instruments.

N. B. The Diameters of the Circumjovials and Circumsaturnals, have not yet been exactly observ'd by Astronomers; so they can have no Place in this and some other Calculations. Only so far we perceive by Mr. *Huygen*'s Information, that they are full as large as our Moon; nay rather, as the lesser of the primary Planets themselves. *Cosmoth.* p. 101.

N. B. Hence we learn the Contents of all these Surfaces in Square Miles, by the help of the Elements of Geometry.

	In Surface.	
The *Sun* contains about	1,813200,000,000	Square Miles.
Saturn - -	14.000,000.000	
Jupiter - -	20.000,000.000	
Mars - - - -	60,000.000	
The Earth - -	200,000.000	
The Moon - -	14,000.000	
Venus - - -	200,000.000	
Mercury - -	55,000.000	

N. B. Hence alſo, by the ſame Help of the Elements, we learn the ſolid Contents of all theſe Bodies in Cubical Miles, as follows.

	In Solidity.	
The *Sun* contains about	230,000,000,000,000,000	Cubical Miles.
Saturn - - - - -	160,000.000,000.000	
Jupiter - - - - -	280,000.000,000.000	
Mars - - - - - - -	44.000,000.000	
The Earth - - - -	266.000,000.000	
The Moon - - - -	5.000,000.000	
Venus - - - - -	264.000,000.000	
Mercury - - - -	39.000,000.000	

N. B. Mr. *Huygens*'s Numbers of the apparent Diameters, are conſiderably different from thoſe of Mr. *Flamſteed*. And I do ſuppoſe ſtill, what I once propos'd to the Reverend Mr. *Durham*, and which he approves of in his Aſtro-theology, that the middle Number between Mr. *Flamſteed*'s and Mr. *Huygens* may be the trueſt: Yet do I, in all my Calculations here, follow thoſe of Mr. *Flamſteed*; becauſe Sir *Iſaac Newton* has done ſo, even in the laſt

P. 11, 12,

Edition

Edition of his *Principia*. When once new Trials have determin'd which of theſe Obſervations are moſt exact, it will not be very difficult to correct thoſe Errors which ariſe from the preſent Uncertainty there is among the Obſervations to the preſent Diameters.

N. B. If we ſum up the laſt Quantity of Matter for the Sun and Planets in the Solar Syſtem together; and add to it, for the Comets, another Quantity equal to that of all the Planets; and, allowing nothing for the interſpers'd Vacuities, which yet are much the greateſt Part, compare the whole with the Cubical Content of this Syſtem upon the Foot of Mr. *Flamſteed*'s Parallax of the fixed Stars, we ſhall find that the Quantity of the Matter is about 232,000.000,000.000,000 Cubical Miles; and that a Cube of the Diameter of the Syſtem, which I eſteem equivalent thereto, is 1,000.000,000.000,000.000,000.000 000.000.000.000 of the ſame Miles, *i. e.* it will appear that this Quantity of Matter is little more than the 4,000.000,000.000,000.000th Part of the empty Space; or in other Words, that a ſmall Pin-head bears a much greater Proportion to a Cubical Mile, than all the Matter in this Syſtem bears to the empty Space therein contain'd.

(5. The *Quantities of Matter* in ſuch of the Planets as afford us the Opportunity of diſcovering the ſame, have been by me thus ſtated;

The *Sun*'s	227500
Jupiter's	220
Saturn's	94
The *Earth*'s	1
The *Moon*'s between	$\frac{1}{39}$ and $\frac{1}{40}$.

Theſe

Theſe Numbers are agreeable to Sir *Iſaac Newton*'s laſt Calculations, and belong only to ſuch of the Heavenly Bodies as have Planets about them, or which influence our Tides; from the Quantity of which Effects alone we can collect the Quantity of the Cauſes, or of the Matter in each Body. The way of diſcovering this Quantity is eaſy, from what has been already proved, that the univerſal Power of Gravitation is in proportion always to the Quantity of Matter in each attracting Body. For if from the conſtant Equality of Proportion there is between the Cubes of the Diſtances and the Squares of the Periods, we, by the Rule of Three, reduce the ſeveral Syſtems of the Planets to any one Diſtance from their Central Bodies, and there Geometrically compute the Proportion of the Centripetal Power to each Central Body, which in that Caſe is directly proportional to the Square of the Velocity of the Planet, we ſhall have the Quantity of the Force of Gravity towards every one of them; and, by Conſequence, the Quantity of that Matter which occaſions the ſame, and is proportionable thereto. For Example; Let us reduce the Diſtance of *Jupiter*'s innermoſt Planet from *Jupiter*, to the ſame Diſtance as the Earth has from the Sun; and obſerve the Difference of their Periods or Velocities in thoſe equal Circles, by this Rule; As the Cube of the *Satellits* real Diſtance 230.000=12.167,000.000,000.000, to the Cube of its imaginary Diſtance 81,000,000=531.441,000.000,000.000,000.000; ſo is the Square of its real Period in Minutes 2548, at its preſent Diſtance from *Jupiter* 6492304, to 28357660311 2024 the Square of its imaginary Period at the ſame

ſame Diſtance from it, as the Earth has from the Sun; whoſe Square Root therefore 16,839.733 is the Period of that *Satellit* there in Minutes. Now as the Squares of theſe Periods reciprocally, which is as the Squares of their Velocities directly, *i. e.* as 27664388961 to 28858667 511289, or as 229 to 227500 nearly, ſo are their Attractions towards their reſpective Central Bodies, and ſo are the Quantities of Matter in thoſe Central Bodies; which was to be demonſtrated: and ſo for the reſt. By this Method we know the *Sun*'s, *Jupiter*'s, *Saturn*'s, and the *Earth*'s, Quantity of Matter. As for the *Moon*, this Method cannot reach it; becauſe there are no Planets revolving about it. But then the Tides in our Ocean, ariſing from the *Sun* and *Moon*'s Influences, or the Water's Gravitation towards them; and the Spring Tides being the Effect of the *Sum* of their Forces, when they are united; while the Nepe Tides are owing to the *Difference* between them when they are oppoſite; we gather from the Obſervations made of thoſe Spring and Nepe Tides, what the Proportion of their Powers is at their different Diſtances; whence we compute what it would be at equal Diſtances; *i. e.* what Proportion there is between the Quantity of their Matter reſpectively. Thus for Example; the higheſt Elevation of the Tide by the *Sun* and *Moon*, at the Conjunction and Oppoſition, is to its Elevation by the prevalence of the Moon over the Sun after the Quadratures, by the beſt Obſervations, as $5\frac{1}{2}$ to $3\frac{1}{2}$. Whence it follows, that the Moon's Force is to the Sun's as $4\frac{1}{2}$ to 1. For half the Sum of any two Quanties, added to half their difference giving the larger, and ſubſtracted from it giving

See Sir Iſaac Newt. Princip. 2d Edit.

ving the ſmaller, as any one may eaſily try, it follows from the proportion of the *Sum*, to the *Difference* above ſtated, $5\frac{1}{2}$ to $3\frac{1}{2}$; that their ſeparate Forces muſt be in the proportion juſt now mentioned of $4\frac{1}{2}$ to 1. Whence that Quantity of Matter in the Moon, which at its proper diſtance will bear this proportion of $4\frac{1}{2}$ to 1 in the Elevation of our Tides and no other, muſt be its true Quantity. By a Computation from which Principles, it appears that the Moon has little more than the 9,100.000th part of the Quantity of Matter in the Sun; or, which is all one, little more than the 40th part of the Quantity in the Earth, as this Table informs us. For if you ſuppoſe the Sun as near as the Moon, its Force on the Tides will be ſo much greater than that of the Moon, as its Magnitude is greater; *i. e.* as about 9,100.000 is to 1, but then that Force being diminiſhed as the Cube of the Sun's greater Diſtance is increas'd, or nearly as the Cube of 337 = 38,272.753 to 1; is upon the whole ſo much more diminiſh'd than increas'd, that it amounts to only the $4\frac{1}{2}$th part of it; that being nearly the quotient of 38,272,753 divided by 9,100.000. By this means we are able to add the Moon's Quantity of Matter to that of the reſt of the foregoing Bodies. But ſince neither *Mars*, *Venus*, *Mercury*, nor any of the Comets, have any viſible Planets about them; nor do they ſenſibly affect our Tides; we have no means of knowing the Quantity of Gravitation towards them, and ſo no means of knowing the Quantity of Matter contained in them.

See Math. Philoſ. *Prop.* 38. *and pag. prius.*

(6.) The *Denſities* of the foregoing Heavenly Bodies have been by me thus already ſtated.

The

The Moon's as	123$\frac{1}{2}$
The Earth's as	100
The Sun's as	025$\frac{1}{2}$
Jupiter's as	019
Saturn's as	15

These Numbers are thus discover'd. By what has been already set down, we know the real quantity of Matter in these several Heavenly Bodies; as also their true Diameters, and thence their entire Bulk or Magnitude; whence we having given quantities of Matter in given Spaces, we must have withal the Densities of the same quantities also.

Or thus; Spheres of the same Diameters with these Bodies, will not have their just quantities of Matter above stated, unless their Densities be as those Numbers here set down; whence it follows, that these and no other express their real Densities respectively.

Thus for Example: The Solid Space in the Earth is to that in the Moon, as the Cubes of their Diameters, or as 48$\frac{1}{2}$ to 1; but, as we have seen, the quantity of Matter in the Earth is to that in the Moon only, as 39$\frac{1}{2}$ to 1; whence it follows, that the Density of the Moon compensates its smallness, and is to that of the Earth as 48$\frac{1}{2}$ to 39$\frac{1}{2}$, or as 123$\frac{1}{2}$ to 100, according to the Table before us; and the Case is the very same in the rest.

(7.) The *Weights of equal Bodies* on the *Surfaces* of the Sun and Planets last mentioned, have been by me thus determined.

On

On the Surface of the *San*, as	24,40
The *Earth*, as	1,00
Jupiter, as	2,00
The *Moon*, as	0,34
Saturn, as	1,28

That is, one Pound with us weighs on the Sun's Surface 24$\frac{4}{10}$ Pounds, and ſo of the reſt.

Theſe Numbers are eaſily deriv'd from ſome of thoſe that go before. For ſince we have already obtain'd thoſe that expreſs the Gravitation towards theſe Heavenly Bodies, at equal diſtances from their reſpective Centers; and ſince we have alſo already obtained their true Diameters, and thence we know their true Semi-diameters; and ſince we know withal, that the Power at different diſtances is ever as the Squares of thoſe diſtances reciprocally: It cannot be difficult thence to compute the quantity of this Power at the particular diſtances of every one's Semi-diameter; which is the ſame with the Weight of equal Bodies on their reſpective Surfaces.

Thus for Example: The quantity of Matter in the Earth is to that in the Moon as 39$\frac{1}{2}$ to 1, and in the ſame proportion do all Bodies gravitate to them at equal diſtances from their reſpective Centers. But ſince the Force of Gravitation diminiſhes, as the Square of the diſtance increaſes, and the diſtance of the Earth's Surface from its Center is to that of the Moon's from its Center, as 365 to 100, whoſe Squares are as 13$\frac{1}{3}$ to 1, this greater diſtance diminiſhes the former Exceſs of Proportion, and reduces it to that of 39$\frac{1}{2}$ to 13$\frac{1}{3}$, or, as in the Table, to that of

of 100 to 34. And the Caſe is the ſame in the reſt.

(8.) The *Diurnal Revolutions* of the Sun and Planets about their own Axis, with reſpect to the Fixed Stars, have been already ſtated thus:

	D.	H.	′.
The *Sun* revolves in about	25 :	6 :	0
Jupiter in	00 :	9 :	56
Mars in	1 :	0 :	40
The *Earth* in	0 :	23 :	56
Venus in	0 :	23 :	00
The *Moon* in	27 :	7 :	43

The way by which theſe Diurnal Revolutions are diſcovered in the *Sun*, *Jupiter*, *Mars*, and *Venus*, is obvious; I mean the Obſervations by Teleſcopes of certain Spots in their Surfaces, and the Noting how long it is e'er thoſe Spots come round again. The Earth's Period is known from the apparent Motion of the Fixed Stars from any Meridian to the ſame again; which is a Periodical Revolution, or Day. The Moon's diurnal Period is known from the Periodical Month, which is exactly equal thereto; otherwiſe the ſame ſide of the Moon would not be always turned to our Earth, as it certainly is; and that to ſuch a degree of Nicety, that the Menſtrual and Diurnal Motions of the Moon have not in the leaſt gain'd nor loſt upon each other from the earlieſt Times of Obſervation: which is a thing exceeding remarkable, and what will be taken particular Notice of hereafter.

Corollary. By comparing this and the fourth Table together, we learn the true Horary Diurnal

nal Velocity of the Equatoreal Parts of the ſeveral Planets: which therefore are as follows.

The *Sun*'s Equator	moves in the ſpace of an Hour abt.	4.000	Miles
Jupiter's		25.000	
Mars's		500	
The *Earth*'s		1.030	
Venus's		1.600	
The *Moon*'s		10	

(9.) The *Quantity of Light and Heat* deriv'd from the Sun to every Primary Planet of this Syſtem, and to each of the three Comets, when at their mean diſtance, has been already ſet down, according to the Numbers following.

Bodies cloſe by the Sun as	45000
Mercury as	6
Venus as	2
The *Earth* and *Moon* as	1
Mars as	$\frac{4}{10}$
Jupiter as	$\frac{1}{27}$
Saturn as	$\frac{1}{90}$
1ſt Comet as	$\frac{1}{1128}$
2d Comet	$\frac{1}{2691}$
3d Comet	$\frac{1}{20000}$

Theſe Numbers are eaſily found; being as the Squares of the Planets diſtances from the Sun reciprocally.

(10.) The *Eccentricities* of the Orbits of the ſeveral Planets, and of the 3 Comets, are thus ſet down already; ſuppoſing each of their middle Diſtances to be repreſented by 1000.

In

	In Proportion.	In Miles.
Saturn's	55 - - - -	42,735.000
Jupiter's	48 - - - -	20,352.000
Mars's	93 - - - -	11,439.000
The *Earth*'s	17 - - - -	1,377.000
Venus's	7 - - - -	0,413.000
Mercury's	210 - - - -	6,720.000
The *Moon*'s	55 - - - -	0,013.000

N. B. The *Eccentricities* of the Orbits of the three Comets, are nearly equal to their middle Diſtances themſelves; which are already ſet down, *pag.* 51. *prius.*

Theſe *Eccentricities* are known, as to the Planets, by the difference of their Apparent Diameters, and ſo of their *Real Diſtances*, reciprocally proportional to them in the Aphelia and Perihelia of the Planets; the half of which difference is equal to this *Eccentricity.* But in the Comets, whoſe fartheſt Diſtance is inviſible, 'tis known by the meer Subtraction of their neareſt from their mean Diſtance; and noting the difference, this difference is the Eccentricity it ſelf.

The Times in which the ſeveral Primary Planets would fall to the Sun, and the Secondaries to their Primaries, if their Projectile Velocites were ſtopp'd, and they were permitted to fall directly to thoſe Centers, by the Power of Gravity, are by me elſewhere thus ſtated.

See Math. Philoſ. *Prop.* 23. *p.* 172, 173.

		D.	H.
Mercury	would fall to the Sun in	15	13
Venus		39	17
The Earth or Moon		64	10
Mars		121	00
Jupiter		767	00
Saturn		190	00
Neareſt Comet		13000	
Middlemoſt		23000	
Outmoſt		66000	

The Circumjovials.

The Innermoſt	would fall to Jupiter in	0	7
The Second		0	15
The Third		1	6
The Fourth		2	23

The Circumſaturnals.

The Innermoſt	would fall to *Saturn* in	0	8
The Second		0	12
The Third		0	19
The Fourth		2	20
The Fifth		14	1
The Moon would fall to the Earth in		4	20

A Stone would fall to the Earth's Center, if there were a hollow Paſſage, in 21′. 9″.

The way of diſcovering theſe Numbers is this: It has been demonſtrated in the Place already referr'd to, that half the Period of every Planet, when it is diminiſhed in the Seſquialteral Proportion of the Number 1 to the Number 2, or

or nearly in the proportion of 1000 to 2828, is the Time of its falling to the Center: From which Demonſtration it is eaſy to derive the foregoing Numbers.

(11.) The Moon has *Day* and *Night*, *Summer* and *Winter*, *Mountains* and *Valleys*, *Land* and *Sea*; as alſo an *Air* or *Atmoſphere*, with *Clouds* and *Vapours*, and a *Moon*, and all after the ſame manner, in general, that our Earth has them. *See the Map of the Moon, Fig. VI.*

That the *Moon* has *Day* and *Night*, is evident from the conſtant falling of the Sun's Light upon one Hemiſphere of the Moon, and the removal of that Light, from *Eaſt* to *Weſt*, quite round it, in a Synodical Month, and is viſible to our Eyes; which Space is therefore equal to an intire Νυχθήμερον, which is 29d. 12h. 44'. long by our Computations.

That the Moon has *Summer* and *Winter*, is evident from the Librations of its Body, *North* and *South*, which imply that its Axis is about $6\frac{1}{2}$ Degrees diſtant from that of the Ecliptick, as our *Summer* and *Winter* is made by the Declination of the Earth's Axis $23\frac{1}{2}$ Degrees from the ſame Axis. Only it hence follows, that in the Moon, tho' the Day be near 30 times as long as ours, and the Year only equal to ours, In duration; yet that Year is with much leſs inequality of Seaſons, of Heat in Summer, and Cold in Winter, than ours; on account of the much ſmaller Declination of the Moon's Axis, than of that of our Earth, as compar'd with the Axis of the Ecliptick.

That the Moon has *Mountains* and *Valleys*, every Body that has ſeen its Face through a Teleſcope cannot but know; theſe Inequalities of

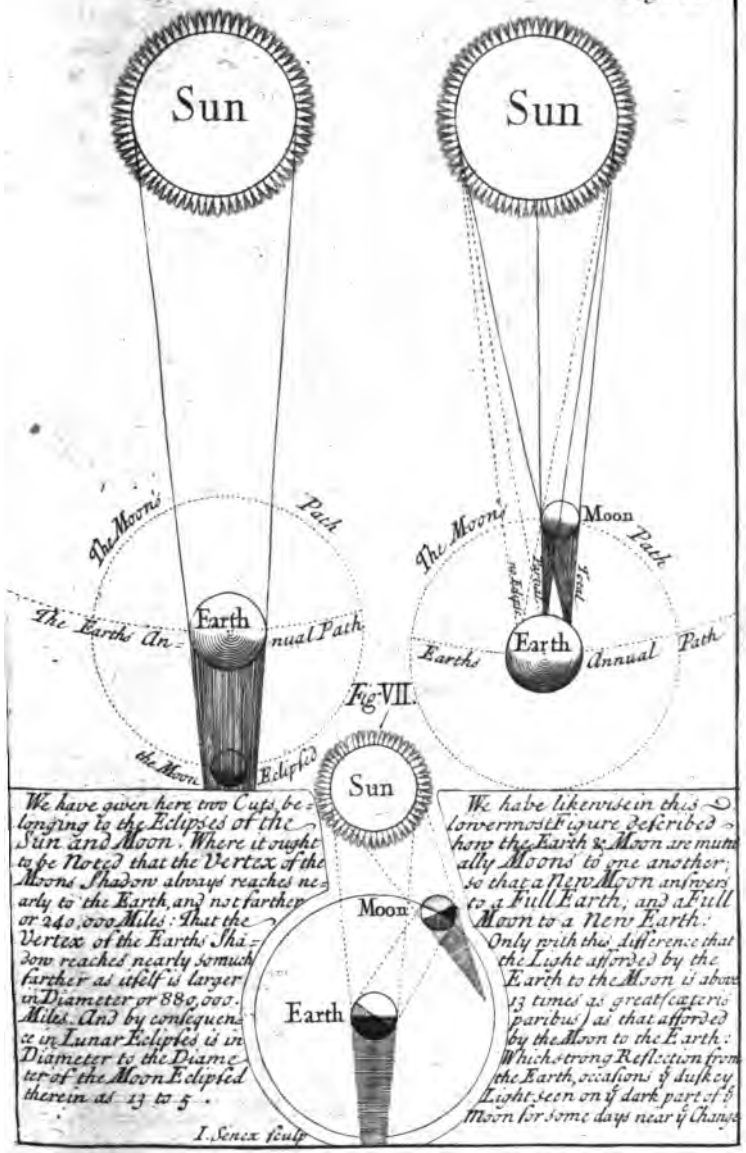
its Surface, eſpecially near the Limits of Light and Darkneſs, excepting the Full Moon, being to all moſt obvious and ſenſible; as are alſo a great Number of circular Cavities in other Places, into which the Sun may be perceiv'd to ſhine, and caſt a Shadow, (excepting near the Full Moon) as evidently as the Moon does ſo here with us. Only it muſt be noted, that thoſe who have meaſur'd the Height of the Lunal Mountains, which we ſtand here very conveniently to do, find them much higher, at leaſt in proportion to its Semi-diameter, if not alſo in reality, than thoſe of our Earth.

That the Moon has *Land* and *Sea*, or ſome Parts full of Inequalities, like our Land, which ſtrongly reflect Light; and others ſmooth and plain, like our Seas, which reflect it more weakly, is, I think, now very clear, not only from the obvious diſtinction which even the naked Eye makes between the rougher brighter Parts, and the ſmoother Spots, and which the Teleſcope does more fully confirm; but more particularly from Mr. *Derham*'s Noble Obſervation, which I am inform'd was firſt made by *Hevelius*; that when the Limit of Light and Darkneſs paſſes over the brighter Parts, 'tis plainly jagged and uneven; but ſtrait and even when it paſſes over the darker; which ſeems to me entirely to determine this Matter.

Aſtro-Theol. Pref. p. 51.

That the Moon has an *Air* or *Atmoſphere* encompaſſing it round, is now, I think, very plain alſo, from its Appearance in Total Eclipſes of the Sun, the fitteſt Times of all for its Obſervation, and eſpecially from the two laſt Total Eclipſes, in 1706, and 1715, of which laſt I have given a full *Account* to the World; and

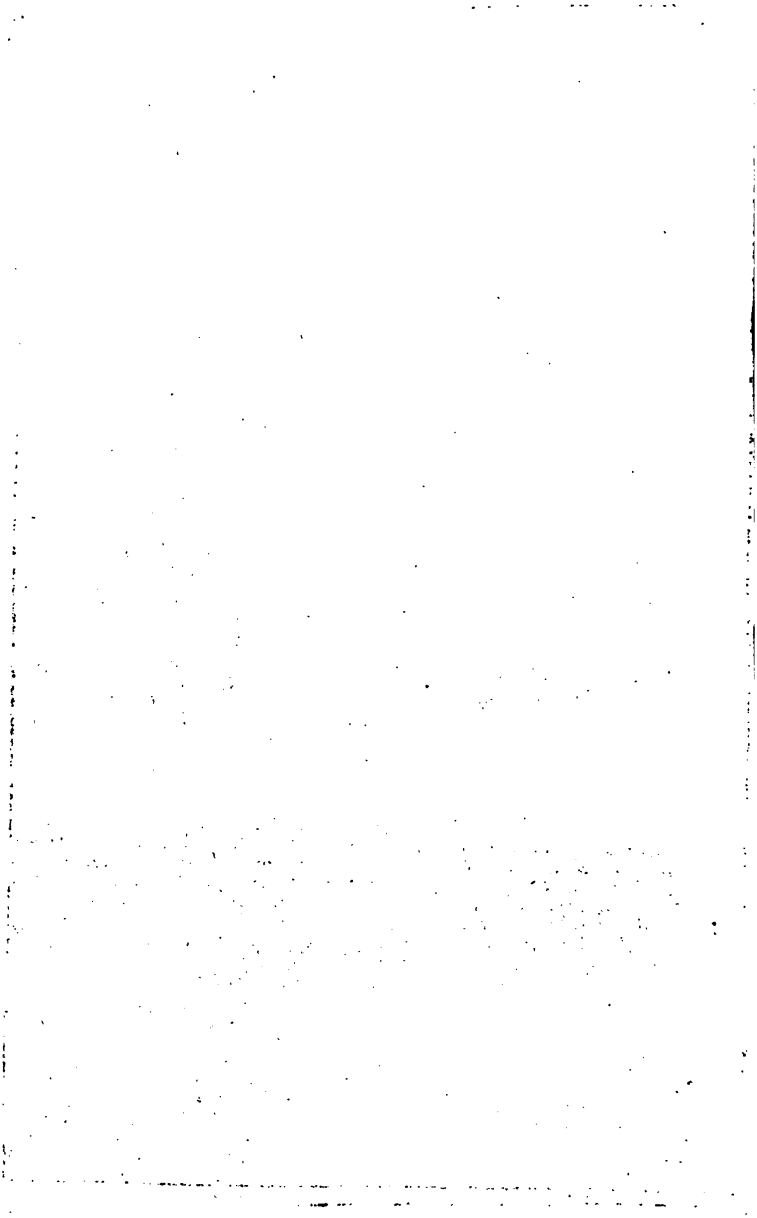
whch



We have given here two Cuts belonging to the Eclipses of the Sun and Moon. Where it ought to be Noted that the Vertex of the Moons Shadow always reaches nearly to the Earth, and not farther or 240,000 Miles: That the Vertex of the Earths Shadow reaches nearly so much farther as itself is larger in Diameter or 880,000. Miles. And by consequence in Lunar Eclipses is in Diameter to the Diameter of the Moon Eclipsed therein as 13 to 5.

We habe likewise in this lowermost figure described how the Earth & Moon are mutually Moons to one another; so that a New Moon answers to a Full Earth, and a Full Moon to a New Earth: Only with this difference that the Light afforded by the Earth to the Moon is about 13 times as great ceteris paribus as that afforded by the Moon to the Earth: Which strong Reflection from the Earth, occasions ye duskey Light seen on ye dark part of ye Moon for some days near ye Change.

I. Senex sculp.



which *Atmoſphere* will, I hope, be more nicely taken notice of and confirmed at the next Total Eclipſe, *May* 11. 1724, which I have prepar'd the Reader for in the ſame *Account*. Only we muſt obſerve, that it appears by the Phænomena, that the Moon's Atmoſphere is, in proportion at leaſt, much *higher* than ours, and at the ſame time much *rarer* alſo.

That the Moon has *Clouds* and *Vapours*, is evident from the foregoing Aſſertions, as to its Seas and Atmoſphere; and is diſtinctly proved by the Phænomena of the laſt Total Eclipſe, in the Scheme or Account before-mentioned. Only it muſt thence be noted, that the rareneſs of its Atmoſphere is ſo great, that it will not ſupport ſuch groſs opake Maſſes as our Clouds are here; but that the Vapours there riſe and fall in a more eaſy and inſenſible manner, than is the Caſe in our Earth, at leaſt ſince the Deluge of *Noah*: For I am ſtill of the ſame mind as to the Antediluvian State, which I propoſed in my *New Theory*, that the Earth's Atmoſphere was at that time comparatively regular and clear, and did then reſemble what we find to be the agreeable condition of the Lunar Atmoſphere at this Day; I mean by the Riſing of the Vapours in the Day, and their Falling down in the Night, in the Form of a gentle Miſt; without any of thoſe Opake Maſſes which we call Clouds; and without any of thoſe violent Storms of Wind, Rain, Thunder, and Lightning, *&c.* which we, to our Sorrow, experience in our Atmoſphere ſince that time. *2d Edit.* p. 246, 247.

That our Earth is a *Moon* to the Moon it ſelf, and that a glorious and moſt uſeful One alſo, is not only evident from the Conſiderati-

See Fig. VII.

on of the Aſtronomical Syſtem of the Earth and Moon, but is directly viſible to our ſelves alſo; it being clear that that Secondary Light which we commonly ſee in the dark part of its Body, for ſeveral Days before and after the New Moon, is no other than Light reflected to the Moon from our Earth, and thence reflected back to us again. Nor is this very ſurprizing neither; ſince the Square of the Earth's Diameter is more than Thirteen times as great as that of the Moon; and by Conſequence the Light of the Earth is at the Moon in the ſame proportion greater, than that of the Moon at the Earth. Only it muſt be here noted, that how conſiderable ſoever the Light of a full Moon be to us, and the Light of a full Earth to the Moon, yet that both of them are very inconſiderable, if compar'd with that of the Sun to either of them; as being *cæteris paribus* in the proportion only of the Square of the Earth's Semi-diameter, to the Square of the diſtance between the Earth and Moon, or, which is the ſame thing, as the enlightned Hemiſpherical Surface of the Moon or Earth, whence the Sun's Light is reflected, to that Hemiſpherical Surface whoſe Radius is the diſtance of the Moon from the Earth, over which that reflected Light is ſpread: *i. e.* that the Sun's whole Light is about 48000 times as great as that of a Full Moon to us; and about 3600 times as great as that of a Full Earth to the Moon.

N. B. Perhaps therefore the Reaſon why we have never been able to procure any ſenſible Heat by burning Glaſſes, when expos'd to the Moon, is not from any real want of Heat in them,

them, but only becauſe thoſe Glaſſes have never been large enough to gather Lunar Rays ſufficient for that Purpoſe.

N. B. The other Secondary Planets, I mean thoſe about *Jupiter* and *Saturn*, are too ſmall and too remote from us, to afford us ſuch Indications of their State, as we have of the State of our Secondary Planet, the Moon. Nor indeed do the primary ones themſelves afford us enow of them to determine in particular their own State, as to many ſuch Matters. Only *Jupiter* affords us the Appearance of Belts, or movable Girdles, and beſides them, his Satellits afford us that famous Phænomenon of the Velocity of the Rays of Light: And *Saturn*, beſides his Five Planets, affords us ſuch a Ring encompaſſing his Body, as ſeems to be the moſt ſingular and curious Spectacle in the whole Syſtem. Of theſe Three Phænomena therefore I ſhall give ſome farther Account, before I proceed to the Comets and fixed Stars.

(12.) As to the Belts, or movable Girdles of *Jupiter*, they ſeem to be formed by its Clouds, which appear to lie and to move regularly, parallel to its Equator, much after that manner that our Clouds do between the Tropicks; where the conſtant Trade-Winds blowing ſtill from *Eaſt* to *Weſt*, muſt, in a leſs Degree, cauſe our Earth's Surface to appear at a great Diſtance with ſuch Belts alſo. Nor is it very ſtrange, that *Jupiter*'s Clouds lie more copiouſly and regularly in ſuch a Parallel Situation, than ours do, if we remember the vaſtly greater Magnitude of *Jupiter*, than of our Earth; and its much quicker diurnal Revolu- *See Fig.* VIII.

tion at the ſame Time. But as to *Jupiter*'s, and other bright fixed Spots, compar'd with the reſt of the duller Parts, I take them, as in the Moon, to be Indications of the Diverſity of Land and Sea in thoſe Planets; although their much greater Diſtance from us, makes it hitherto a great deal harder to diſcover the ſame more diſtinctly.

(13.) That the Rays of Light are not a meer and abſolute Inſtantaneous Preſſure through a Fluid, but a real Succeſſion of the ſmall Particles of Light gradually, and in Time flowing from the *Sun*'s Body, is proved by the Eclipſes of *Jupiter*'s Planets. Theſe Eclipſes ever *anticipate* the even Calculation, when our Eye, by the annual Motion, *meets* the Rays of Light reflected from them, whether at their laſt Egreſs from the Sun's Light into *Jupiter*'s Shadow, or at their firſt Ingreſs into the ſame Light afterward; and theſe Eclipſes ever come *too ſlow* for the ſame even Calculation, when we are going from thoſe Rays; and this ſtill in that Proportion, which implies that the Rays go no leſs than 81,000.000 Miles, or from the Sun to the Earth, in half a Quarter of an Hour

See Fig. IX.

(14.) That *Saturn* has a broad Ring about itſelf, like a broad Tin Horizon about a Globe, is now well known, ſince the Days of the famous Mounſier *Huygens*, who firſt diſcovered what it was: And every body that views *Saturn* through a good *Teleſcope* of Ten or more Feet, may ſee it very plainly at this Day. This Ring is vaſtly large; and when meaſur'd by the Micrometer, and compar'd with *Saturn*'s own

See Fig. X.

Fig. VIII
Pag. 71.

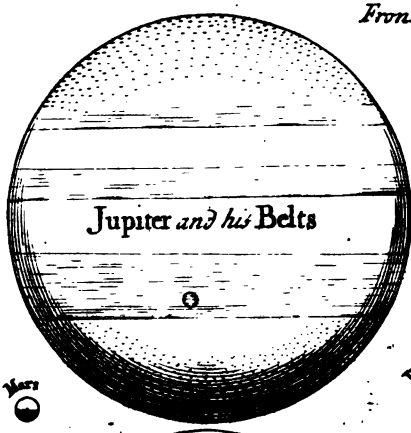


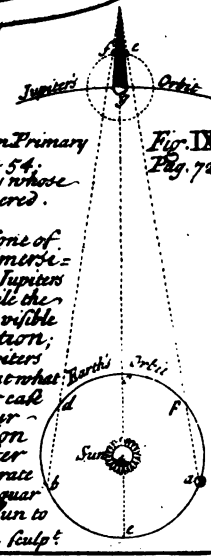
Fig. X.
Pag. 72.

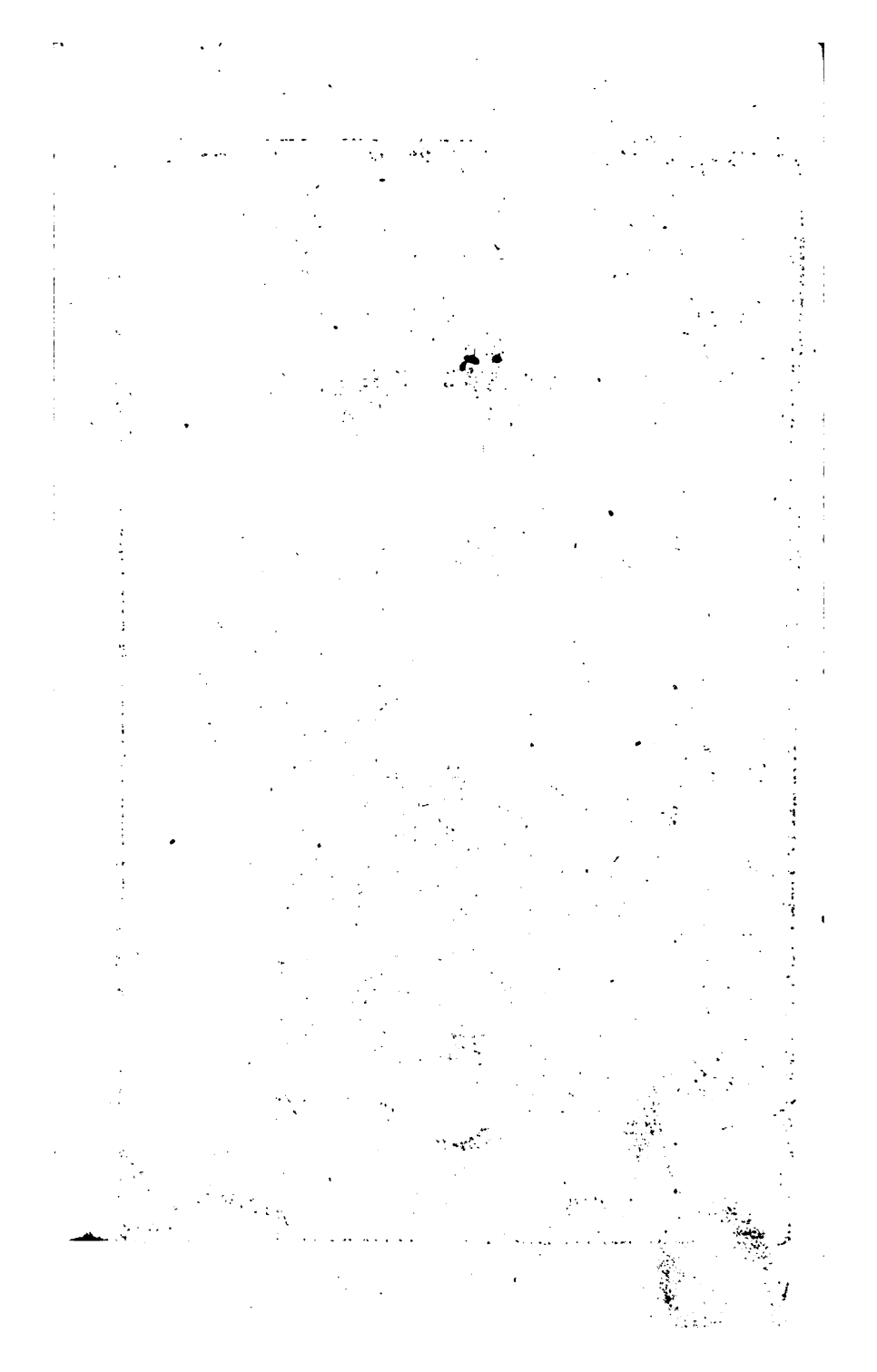
We have here exhibited to the Readers View the Seven Primary Planets, in their true Proportions, as in the Table page 54. Jupiter has its Belts; and in one of them that Spot by whose Revolution several times his Diurnal Period was discovered. Saturn has also here its Ring in its true Proportion.

Besides these we have here represented an Eclipse of one of Jupiters Planets, both at its Immersion at e, and its Emersion at f. The former of which is alone visible to us from Jupiters Conjunction with the Sun to its Opposition; or while the Earth passes from c, by a, and p, to o: As is the latter visible alone from that Planets Opposition to its Conjunction; or while the Earth passes from o, by d, and b, to e. Jupiters Body still hiding one of those appearances from us. But what is here peculiarly remarkable is this, that in the former case the Immersion is still seen so much too soon, by our going to meet the last Rays before; and the Emersion so much too late, by our going from the first Rays after the Eclipse, as implys the Motion of Light to be at y rate of 180,000 Miles in one Second of time; or to be half a quarter of an Hour in coming 81,000,000 Miles from the Sun to the Earth.

I. Senex sculp.

Fig. IX
Pag. 72.





own Body, appears to have the Dimenſions following.

Inward Semi-Diameter about	55000	Miles.
Outward Semi-Diameter	76000	
Difference, or Breadth	21000	
Diſtance from *Saturn*'s Body on every Side	21000	
Thickneſs not exactly known; perhaps	750	

N. B. This Ring caſts a mighty Shadow upon large Regions of *Saturn*'s Body, which removes from one Part to another, and cauſes great Diverſity as to Light and Darkneſs thereon: And, what is probably to them more ſtrange, they hardly know what it is that cauſes thoſe Varieties: For though we ſtand conveniently to ſee what it is, and know it to be a mighty Ring encompaſſing *Saturn*'s Body; yet is it not ſo eaſy for any in *Saturn* to diſcover it. They muſt naturally imagine it to be in the Heavens above them; and have, as it ſeems, no way, but by Aſtronomical Obſervations and Parallax, to find out what it is: Juſt as we find out the Diſtance and Motions of the Moon, or of any other Heavenly Body. Whether this Ring, or indeed *Saturn* it ſelf, revolve about its Axis, we are not yet aſſur'd: Nor are we certain whether this Ring be Solid or Fluid. When once our Glaſſes can ſhew us any permanent Spots in the Body and Ring of *Saturn*, we ſhall be able to determine whether there be ſuch a diurnal Motion or not; but till that Time we muſt be content with Conjectures: For which, if there be room, I ſhould certainly ſuppoſe the Ring

Ring to be Solid, and both to have ſuch a Motion; nor only from its Conveniency for any Creatures that may be thereon, but from parity of Reaſon, and the general Caſe of the reſt of the Heavenly Bodies: Not one of which are yet known to be deſtitute of ſuch a Motion; although ſome of them have not yet afforded us an Opportunity of certainly determining the ſame.

See the Account of Comets towards the end of my Mathematick Philoſophy, *at large.* *Ibid.* p. 415.

(15.) The Number of the Comets is very conſiderable; to be ſure much greater than of the viſible Planets. Our famous Dr. *Halley*, by ſearching into the Hiſtories of them, and comparing the Obſervations made about them, has given us a Catalogue or Table of ſo many as he could find well enough deſcrib'd to afford Foundation for determining their Obits; which Table I have elſewhere given the Reader.

This Number is 24, all which have appear'd within the laſt 400 Years, in theſe Parts of the World. He has alſo obſerv'd, that out of theſe 24, Three had their Orbits and Circumſtances ſo very like, and the Intervals of appearing ſo nearly equal; and that Two others had their Orbits and Circumſtances ſo very like alſo, that he juſtly concluded it exceeding probable that the former Three were one and the ſame; and in ſome Meaſure ſo, that the latter Two were alſo one and the ſame Comet; returning the firſt after 75, the latter after 129 Years. Sir *Iſaac Newton* alſo diſcover'd, and in the new Edition of his *Principia*, Publiſhed his Diſcovery, that the laſt moſt eminent Comet of 1680, 1681, towards the end of its Appearance, bent its Courſe ſo much inward from a

P. 464, 465.

Para-

Parabolick Line, as to ſhew its real Trajectory to be *Elliptical*; and this in ſuch Proportion, that its Period of returning muſt be more than 500 Years. After which Diſcovery I my ſelf, for ſeveral Reaſons, ſuppoſing this to be the ſame Comet that cauſed the Deluge, did accordingly gueſs the Period to be either 575, or 504 Years; according as it had made either Seven or Eight Revolutions ſince that Time; and drew up Tables upon both thoſe Hypotheſes, when the ſame Comet muſt have appear'd afterwards, in order to ſearch whether they did ſo or not; but not having either *Hevelius*'s or *Luvienetz*'s Hiſtories of Comets then by me, I could not immediately confirm my Hypotheſis any further. But in a little time I found, that Sir *Iſaac Newton*, and Dr. *Halley*, had compleated what I wanted; and had diſcovered that juſt ſuch a Comet had appear'd the 44th Year before the Chriſtian *Æra*, which was the Year that *Julius Cæſar* was ſlain; as alſo, *Anno Dom.* 531, or 532; and again *A. D.* 1106; and laſtly, *A. D.* 1680, 1681, and this ſtill, after the forementioned Interval of about 575 Years; and that they accordingly did juſtly conclude it to be the very ſame Comet that appeared in thoſe ſeveral Years. So that we have the Orbits of only 21 Comets, and the Periods at the moſt of only Three of them yet kown.

N. B. The firſt of theſe Three appear'd probably 1304, and 1456, but more certainly 1531, 1607, and 1682; and as there is little reaſon to doubt, will by Conſequence appear again 1758, and 1832, and ſo every 75 Years afterwards. The Second of them appear'd *A. D.* 1532, and not improbably again 1661, and ſo it may be expected

expected to return 1789, and again 1918, and ſo every 129 Years afterwards. The Third having laſt appear'd 1680, 1681, and having its Period no leſs than 575 Years, cannot return till *A. D.* 2255. But then, as to the reſt of the Comets, we cannot yet foretel the Periods of their Revolution, for want of Ancient exact Hiſtories and Obſervations, but muſt leave their Determination to future Ages; which will, no doubt, if Aſtronomical Learning continues in the World, be in Time fully diſcovered, and known by our Poſterity.

See Fig. XI. *N. B.* The Obſervations ſhew that the Comets are about the Bigneſs of the Planets, and have vaſt Amoſpheres about them; the Central Parts thereof being denſer than the Superficial; as alſo, that the Vapours and Clouds thereof are hurried about in great Diſorder and Confuſion, like Planets in a Chaotick State: It alſo appears from the like Obſervations when near the Sun, that their Atmoſpheres wind themſelves round like a revolving Globe, and aſcend towards the Regions oppoſite to the Sun; as if the rareſt Vapors whereof they are compos'd, were carried up by the Solar Rays; as alſo that thoſe Tails are generally the longeſt which ariſe from the greateſt Nearneſs to the Sun.

N. B. The Motion of Comets being ſome from *North* to *South*, others from *South* to *North*; ſome from *Eaſt* to *Weſt*, others from *Weſt* to *Eaſt*, in all Plains and Directions; and this from the very Sun downwards, to the Regions vaſtly beyond *Saturn* upwards; and that Motion appearing moſt exactly regular, without the leaſt Retardation by any ſenſible Reſiſtance in their ſeveral Courſes, it is thence moſt certain, that there

This is the Representation of the lowest part of the Tail of a Comet, near its Perihelion, with the purer part of its Atmosphere winding it self into it Tail, And the Cloudy part of the same placed round about the Central Solid. As it Appeard to D. Hook through a Telescope.

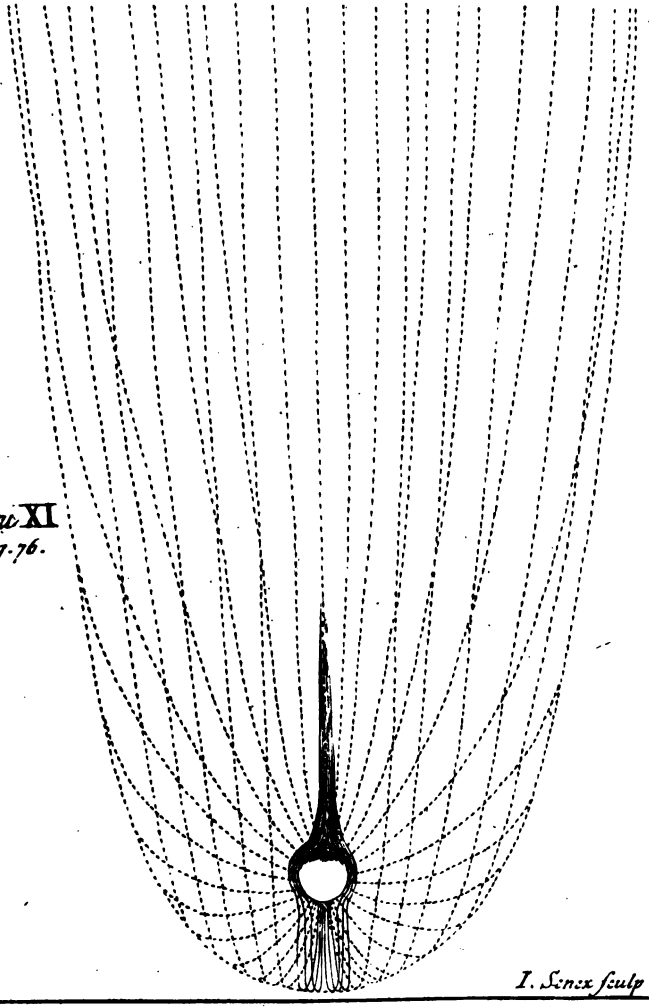


Figure XI
Pag. 76.

I. Senex sculp.

there are no *ſolid Orbs*, as the Ancients ſuppoſed; and that there is no *ſubtile Matter*, as the *Carteſians* imagin'd; but that all the vaſt Spaces between, and beyond the Planetary Syſtem, are an immenſe Void or Vacuity, as to ſenſible reſiſting Matter; and admit ordinarily of nothing but of the Rays of Light, unleſs it be near the Comets with their Atmoſpheres and Tails; and near the Planets with their Atmoſpheres; all which Particles put together are almoſt nothing in compariſon of thoſe vaſtly prodigious, thoſe immenſely numerous Vacuities which are interſpers'd between them, as we have already ſeen from an exact Calculation, *Pag.* 19.

(16.) The Fixed Stars, viſible to the naked Eye of the Acuteſt Obſervers, are in Number conſiderably under 2000, and thoſe ſeen only through Teleſcopes, about 10 or 20 times that Number. Their Diſtance is found by Mr. *Huygens*'s conjectural Method to be about 2,200,000,000,000. And the Diſtance of ſome, from Dr. *Hook*'s and Mr. *Flamſted*'s Annual Parallax, which I look on as much more certain, about the third Part of that diſtance, or 700,000,000,000 Miles. However, 'tis certain that this Diſtance is vaſtly great if compar'd with that of the Planets and Comets, when they are remoteſt from the Sun; and that in particular the famous Comet of 575 Years Period, which goes ſometimes about 14 times as far off the Sun as *Saturn*, *i. e.* about 11,200,000,000 Miles, is not then near enough to them to be altered by that of the Fixed Stars Gravitation towards, or Influences from them. Theſe Stars ſeem to be of the

See my Aſtron. Lect. III, IV.

the ſame Nature with the Sun, as ſhining with their own Native Light; and continuing fixed in the Centers of their ſeveral Planetary and Cometary Syſtems, as the Sun does.

(17.) The Fixed Stars ſeem to be really of very different Magnitudes, yet not of ſuch very different Diſtances from this Syſtem as is now generally ſuppoſed. As to the firſt Aſſertion, it ſeems very agreeable to the reſt of the viſible Bodies in the World, whether Planets or Comets, which are of very different Magnitudes alſo; and ſeems confirm'd from the ſecond Aſſertion; for if the Fixed Stars viſible to the naked Eye be at no very different Diſtances from our Syſtem, that vaſt apparent Inequality of Light which they ſend hither, and according to which they are ranked under ſix or ſeven different Magnitudes on our Globes and Planiſpheres, will be next to a Demonſtration, that they are themſelves really of very different Magnitudes alſo. Nor in that Caſe will it be proper to place the Teleſcopick Stars at any vaſtly farther Diſtances, ſince they do not at all ſeem different from the other, only ſtill gradually ſmaller. Now that the Fixed Stars, viſible to the naked Eye, are not at any very different Diſtances from our Syſtem, is moſt probable, becauſe the beſt Method we yet have of knowing thoſe Diſtances, I mean their Parallax, determine that the Diſtance of thoſe Three which have been try'd, tho' all of different apparent Magnitudes, is very nearly the ſame. I do not deny that ſome Fixed Stars may be vaſtly farther off than others; and that there may be Syſtems of Worlds ſcattered every where in the Univerſal Immenſe Void: But I ſay, that if farther

ther Obſervations confirm this Parallax, and any ſort of Equality thereof, we muſt accommodate our Opinions to our Evidence, and in that Caſe muſt ſuppoſe, that the grand Syſtems themſelves of Sun, Planets, Comets, and Fixed Stars are like the Parts of ſuch a Syſtem, vaſtly remote from each other; nay, perhaps, out of the reach of each others Diſcovery alſo. But as to this noble Theory, we cannot be at all poſitive till the Parallax and Diſtance of the Fixed Stars be more nicely obſerv'd, and the Aſtronomical World better ſatisfy'd about it; the doing of which I would therefore earneſtly recommen to the publick Conſideration.

(18.) Several of theſe Fixed Stars, eſpecially of the ſmaller ſort, do ſometimes diſappear, and new ones appear; and ſome of them do appear or diſappear, look Brighter or Duller by Turns; and this ſometimes after certain Intervals of Time alſo. This is a known Fact; and has in ſome meaſure been noted from almoſt the earlieſt Ages of Aſtronomy. But then, what ſhould be the Cauſe of ſuch mutable Appearances among theſe Fixed Stars, is by no means yet diſcovered; nor have I hitherto ventur'd to propoſe any Conjecture about them. However, ſince others have already begun their Hypotheſes, which ſeem to me commonly either intirely precarious or abſolutely impoſſible, I ſhall make bold here to offer my own, which ſhall not only be free from ſuch ſtrong Objections, but agreeable to the neareſt parallel Caſe of the World. We know that the Sun it ſelf, the only Fixed Star, as I may call it, that is ſufficiently within the reach of our Teleſcopes, has ſeveral Times not a few *Maculæ* or *Spots* upon his Body; which fre-

quently become *Faculæ*, or Parts brighter than the reſt; and which come and go by turns. How many there may poſſibly be of theſe Spots at certain times we cannot ſay; but this is plain, that we do not know but ſo many of them may ſometimes ariſe, as may, in good part, cover over the Sun's Surface, and render its Light and Heat very Weak and Dull. Theſe Spots may be again diſſipated, and become *Faculæ*, or Brighter than ordinary. Theſe *Maculæ* and *Faculæ* may ſometimes, by Turns, gain ground on one another, after certain Intervals of Time, and cauſe the Sun to grow Darker and Brighter periodically. Nay, we do not know, but theſe *Maculæ* may ſometimes, eſpecially in Caſe the Sun were ſmaller, cover over the greateſt Part of its Surface, ſo as to extinguiſh, or at leaſt to obſcure its Light; which yet in Length of Time may be overcome, and the Sun may recover its former Splendor, if not one greater than that before. Since therefore ſuch Phænomena of the Fixed Stars are like what our Sun appears by known Obſervations to be in ſome ſort liable to, I think it the beſt Guide, as to what we ſee to happen in others of them; and that the *Maculæ* and *Faculæ* of thoſe Stars may cauſe theſe ſurprizing Appearances. Nor can I eaſily think in any other manner, about thoſe ſix Spaces of Light, or Starry Miſts, which have been lately diſcovered in the Heavens, than by Analogy to what we know of Things of a like Nature; *viz.* that they are a Company of very ſmall Fixed Stars, as invifible to us with our ordinary Teleſcopes, as the known Teleſcopick Stars in the Milky Way are to our natural Eyes, which give ſuch an irregular Appearance of indiſtinct Light alſo.

Tranſact. Philoſ. *N.* 347 *for* A.D. 1716.

PART

PART IV.

Certain Obſervations *drawn from the foregoing* Syſtem.

(1.) SINCE Matter is entirely a Paſſive Subſtance; no ſpontaneous Motion or Action, even in Brutes, can be derived from it, much leſs can that Active and Free Being, the Soul of Man, be juſtly ſuppoſed to be material.

(2.) Since Bodies once exiſting will continue to exiſt, and that for ever, in the ſame State of Reſt, or uniform Motion, along ſtrait Lines, wherein they once are, at leaſt with the alone Concurrence of the Firſt Cauſe; the Projectile Motions of the Heavenly Bodies require no new, or particular conſtant Acts of Power for their continuation in that State. But,

(3.) Since none of the Heavenly Bodies move uniformly in ſtrait Lines, but all of them rather unequally, and all in Curves, they are every one impell'd, and that perpetually, by ſome External Power, Efficacy, Force, or Influence; and

thereby obliged to revolve in ſuch Curves; which Power we have already proved to be that of Gravity.

(4.) If that Power of Gravity were ſuſpended, all the whole Syſtem would immediately diſſolve; and each of the Heavenly Bodies would be crumbled into Duſt; the ſingle Atoms commencing their ſeveral Motions in ſuch ſeveral ſtrait Lins, according to which the projectile Motion chanc'd to be at the Inſtant when that Influence was ſuſpended or withdrawn.

(5.) Since pendulous Bodies receive no ſenſible Reſiſtance in their Internal Parts; and ſince both the Planets and Comets move prodigiouſly ſwift with the utmoſt Freedom, and without any ſenſible Reſiſtance through the Æthereal Regions, 'tis certain there is no *Subtile Matter* pervading the Univerſe, as ſome have ſuppoſed.

(6.) All the Solutions, therefore, of the Phænomena of Nature, which depend on the Suppoſition of that *Subtile Matter* are intirely falſe, and contrary to the plain State of our *Syſtem.*

(7.) To ſuppoſe a *Plenum*, or that the Univerſe is entirely full of ſuch Subtile Matter, is utterly vain and ungrounded; nay, contrary to the moſt certain Obſervations.

(8.) Since the particular Proportion ever obtainingas to the Power of Gravity, I mean that of the Duplicate of the Nearneſs of Bodies, is not any neceſſary Reſult from the Nature of Matter, or any Laws of Motion in the World; it is plain that this Proportion is no way owing to any Mechanical Cauſe or Neceſſity whatſoever, but intirely to free Choice, Prudence and Judgment. (9.) Since

(9.) Since all Bodies are equally capable of Reſt, and of all Degrees of Velocity whatſoever; but are in their own Nature no way determin'd to any of them; that nice Adjuſtment there is of the projectile Velocity to the Attractive Power through the whole Univerſe; whereby the Planets both primary and ſecondary revolve nearly in Circles, and the Comets nearly in Parabola's, is no way owing to any Mechanical Cauſe, or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(10.) Since all Bodies are equally capable of being originally impell'd every way, and of having their projectile Motions in any Direction whatſoever; and ſince all the Planets, both Primary and Secondary, have their projectile Motions almoſt perpendicular to the Lines from their Central Bodies, which was abſolutely neceſſary to their Motion at nearly the ſame Diſtance from the Sun; this nice Adjuſtment of the Direction of their projectile Velocity, whereby they became fit for the Habitation of Animals, and without which they would have been almoſt uſeleſs in the World, is no way owing to any Mechanical Cauſe, or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(11.) Since all Bodies are equally capable of Reſt as of Motion, and that in any Time, and with any Velocity; and ſince there is no original Connection between the projectile Directions and Velocities, of any two or more Bodies which now revolve about the common Centers of their own Gravities; without which Revolutions about thoſe Centers, the preſent Syſtem of the

Univerſe could not be ſupported; and yet without the moſt exact Adjuſtment of thoſe Directions and Velocities to one another, the Directions parallel, but contrary to each other, and the Velocities in a Proportion reciprocal to thoſe Bodies themſelves, ſuch a Revolution could not be performed: Such an Amazing and Mathematical, and Univerſal, Adjuſtment of theſe Circumſtances, cannot be owing to any Mechanical Cauſe or Neceſſity whatſoever, but muſt ariſe entirely from free Choice, Prudence, and Judgment.

(12.) Since all Bodies are equally capable of poſſeſſing any part of Space whatſoever; and ſince the Planets, both Primary and Secondary, and the Comets, with their ſeveral Degrees of Velocity, might be placed at any Diſtance from their Central Bodies; that nice Adjuſtment there is of their ſeveral Diſtances from thoſe Central Bodies, to their ſeveral Velocities; whereby the Planets all revolve nearly in Circles, and the Comets nearly in Parabola's, can be no way owing to any Mechanical Cauſe or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(13.) Since all Bodies are equally capable of any Direction whatſoever, and yet all the Planets, both Primary and Secondary, do revolve about their Central Bodies, according to one Direction almoſt from *Weſt* to *Eaſt*; this particular Direction of the Annual Motions of all the Planets is no way owing to any Mechanical Cauſe or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(14.) Since all Spherical Bodies are equally capable of turning round upon any Axis, or according to any Direction whatſoever; and yet the Sun and all the Planets, whoſe Diurnal Motions are already diſcovered, do revolve about their own Axes nearly from *Weſt* to *Eaſt*; this particular Direction is no way owing to any Mechanical Cauſe, or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(15.) Since all Spheres revolving about their own Axes are equally capable of turning round with any Velocity, and in any Period; and yet all the Heavenly Bodies that do ſo revolve, keep within proper Limits, agreeably to the State of every ſuch Sphere; as particularly we find to be the Caſes of our Earth, and of *Mars* and *Venus* our Neighbouring Planets: This due Proportion of the Diurnal Motion is no way owing to any Mechanical Cauſe, or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(16.) Since all Bodies revolving about another, are equally capable of moving in any Plains whatſoever; and yet the ſeveral Primary Planets move almoſt in the ſame Plain about the Sun, and the Secondaries all in their ſame ſeveral reſpective Plains about their Primaries, this exact Direction of the Planets into the ſame Plains is no way owing to any Mechanical Cauſe, or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(17.) Since the greateſt, as well as leaſt Planets are equally capable of being plac'd near, as well as far off the Sun, the placing the largeſt Primary Planets the moſt remote, and the leaſt neareſt the Sun, whereby the ſeveral Motions

continue moſt undiſturb'd, and many fatal Conſequences, which would otherwiſe happen, are prevented; is no way owing to any Mechanical Cauſe or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(18.) Since the Secondary Planets are equally capable of revolving about their Primaries at the ſmalleſt, as at any other Diſtance whatſoever; and yet they all of them are ſituate ſo far off, as to cauſe no dangerous Tides in the Primaries Ocean, which a much greater Nearneſs would certainly have done; this due Place of the Secondaries from their Primaries, is no way owing to any Mechanical Cauſe or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgement.

(19.) Since all the Planets are equally capable of revolving round the Sun at the ſmalleſt, as greateſt, Diſtances, and yet they are Situate in a Mean, ſo as neither to be ſcorch'd with its Heat, nor frozen up with Cold, for want of it; as we particularly find to be the Caſe of our Earth: This proper Situation of the Planets, is no way owing to any Mechanical Cauſe or Neceſſity whatſoever; but entirely to free Choice, Prudence, and Judgment.

(20.) Since the Comets do revolve in very oblong Ellipſes, quite through the Planetary Regions; and this in vaſtly long Periods, according to all manner of Directions, and in all Situations of their Plains, contrary to the Laws every where obſerv'd among the Planets; 'tis very evident that the Intentions and Deſigns for which they are fitted, are very different, at leaſt in their preſent State, from thoſe for which the other are accommodated.

(21.) Since

(21.) Since that Immechanical Power of Gravity, which is conſtantly exercis'd in the World, is proportionable to the Quantity of each Body to which it belongs; which Quantity is vaſtly unequal in the ſeveral Celeſtial Bodies; it is thence certain, that the Author of that Power muſt be a Being that exactly knows, and takes perpetual Notice of all thoſe Bodies whatſoever, in all the Variety of their Parts, and Magnitudes.

(22.) Since that Immechanical Power of Gravity which is conſtantly exercis'd in the World, is not of one even and conſtant Quantity, but vaſtly unequal, according to the Squares of the different Diſtances of the Bodies affected with it; it is thence alſo certain, that the Author of that Power muſt be a Being that exactly knows, and takes perpetual Notice of the Diſtances of all thoſe Bodies whatſoever, in all the Variety of their Parts and Magnitudes.

(23.) Since all the Effects of this Immechanical Power of Gravity do conſtantly obtain, and all the Conſequences of that Power are ever found true in Fact, throughout the Univerſe; (abating only the Caſe of Miracles, not here to be conſider'd) it is certain, that the Author of that Power can and does move all Bodies, how great ſoever, and with what Degree ſoever of Velocity, according to that due and fixed Proportion; without the leaſt Oppoſition or Contradiction, either from the Matter to be moved, or from any other Agent whomſoever.

(24.) Since the Spherical Figures, with the Original Native Light of the Fixed Stars, and all other Circumſtances, do ſhew that they be-

long to our Univerſe, or grand Syſtem, and are ſubject to the ſame Law of Gravity which our particular Syſtem is governed by; it follows, that the foregoing Conſequences concerning the Author of that Law already drawn, as to one Syſtem, are alſo true, relating to all the others.

(25.) Since all the Motions in our Solar Syſtem muſt be ſo far at leaſt retarded, as their Paſſage through a Medium every-where penetrated with the Rays of Light muſt imply; which Retardation, how ſmall ſoever it be in itſelf, muſt in ſufficient Length of Time become ſenſible, (as it begins to be already in the Caſe of the Lunar Period,) it follows, that the ſeveral Parts of this Syſtem do by Gravitation naturally and conſtantly, unleſs a miraculous Power interpoſe to hinder it, approach nearer and nearer to the Center of Gravity of this Syſtem; and in a ſufficient Number of Years will actually meet in the ſame Center, to its utter Deſtruction.

(26.) Since this entire grand Syſtem of Things is ſubject to this Power of Gravity; and ſince that Power of Gravity has its Effects as well among the Fixed Stars, with their ſeveral Syſtems, as in our Planetary and Cometary World, about the Sun; and ſince withal, the Sun and Fixed Stars do not revolve about one another, or about any common Center of Gravity, as the Planets and Comets do; which Motion alone, according to Mechanical Laws, can hinder the Effect of that Power of Gravity: it follows, that the ſeveral Syſtems, with their ſeveral Fixed Stars or Suns, do naturally and conſtantly, unleſs a Miraculous Power interpoſes

ſes to hinder it, approach nearer and nearer to the common Center of all their Gravity; and that in a ſufficient Number of Years, they will actually meet in the ſame common Center, to the utter Deſtruction of the whole Univerſe.

(27.) Since Power can be exerted no where but where the Being which exerts that Power is actually preſent; and ſince it is certain, as has been ſhewn, that this Power is conſtantly exerted all over the Univerſe, 'tis certain that the Author of the Power of Gravity is preſent at all Times in all Places of the Univerſe alſo.

(28.) Since this Power has been demonſtrated to be Immechanical, and beyond the Abilities of all Material Agents; 'tis certain that the Author of this Power is an Immaterial or Spiritual Being, preſent in, and penetrating the whole Univerſe

(29.) Since the Sun and Fixed Stars ſend out perpetually, and with the utmoſt Velocity, Rays or Corpuſcles of Light and Heat from themſelves; and ſince we ſee with our Eyes that there is not any ſuch Equality of thoſe Stars on every Side, as might induce us to believe there can be an equal Circulation of thoſe Rays from one Syſtem to another; and ſince we find by Mutations in our Sun, and by the Parallel Mutations in ſeveral of the Fixed Stars, that theſe very Suns themſelves, the Fountains and grand Supports of the ſeveral Syſtems, are equally liable to Decay with the reſt of the Univerſe; 'tis hence alſo plain, that all theſe Suns and Syſtems are not of Permanent and Eternal Conſtitutions; but that, unleſs a miraculous

lous Power interpoſes, they muſt all, in length of Time, decay and periſh, and be rendred utterly incapable of thoſe noble Uſes for which at preſent they are ſo wonderfully adapted.

N. B. Although the External Parts of the Heavenly Bodies, with their Nature and Uſes, may be moſt *eaſily* and certainly determin'd from Fact and Obſervation, yet does there not want Arguments whereby we may come at the Internal Parts or Regions of the ſame, their Nature and Uſes, at leaſt from very probable Conſiderations. Thus we know from Obſervation in Comets, that there are large Central Solids incloſed in their Atmoſpheres, indiſſoluble by the utmoſt Heat in their greateſt Nearneſs to the Sun: We alſo know from the like Obſervations, that Comets are about the Bigneſs of Planets, and that the Atmoſpheres of Comets do beſt anſwer the Chaotick or Primary State of Planets, of all other Bodies in the Univerſe. We know farther by Demonſtration, that if there be any Central Cavities within ſuch Solids, the Effects of the Power of Gravity will be there ſo equipois'd on every Side, that there will appear to be little or nothing of ſuch a Power at all: And, laſtly, we may know, in ſome Meaſure, by Obſervations and Demonſtrations compar'd together, whether there be ſuch Cavities in them or not; and in which of the Heavenly Bodies they are the moſt conſiderable, as we ſhall ſee preſently. This general Obſervation thus Premis'd, I come to the Fifth Part of this Treatiſe, to give my Conjectures as to the ſeveral Natures and Uſes of all the Parts of this Syſtem.

See at the End of my Mathematical Philoſophy.

See Math. Philoſ. Prop. 44.

PART V.

Probable Conjectures *as to the Nature and Uſes of all the Parts of the* SYSTEM *of the viſible World.*

(1.) THE Sun and Fixed Stars are, to be ſure, on their external Regions or ſuperficial Parts, moſt intenſe Fire or Light; and the grand Fountains of that Fire and Light which is in the whole viſible Univerſe, and without which there could be no ſuch thing as a *Viſible Univerſe*, or Uſeful Syſtem at all. So that there can be no doubt of the general Nature and Uſe of thoſe external Regions. Nor perhaps ſhall we be far out of the way, if we ſuppoſe thoſe Parts of the Sun to be 10000 Planets or Comets all on Fire.

(2.) The Planets, both Primary and Secondary, appear, as to their viſible external Regions, or ſuperficial Parts or Atmoſpheres, to be like to that Planet we live upon, the Earth; or moſt convenient and well contrived Habitations for all ſorts of Sea and Land, viſible and groſs Animals;

Animals; with ſuch Plants as are uſeful for any of their Preſervation and Suſtenance, during their continuance thereon.

(3.) The Air expanded about the ſeveral Planets, which, as to their Elaſtical Parts, are corporeal, but inviſible, appear to be the proper Places for the Habitation of not wholly Incorporeal, but Inviſible Beings; or of ſuch as have Bodies made of too ſubtle and aerial a Texture and Conſtitution to be ordinarily ſeen by our Eyes, or felt by our Hands. And if it be conſidered, that while all the ancient Prophane Traditions, and Hiſtorical Accounts, as well as the Sacred Writings, which aſſure us of the Exiſtence of ſuch inviſible Beings about our Earth, do at the ſame time aſſure us of their inhabitating in our Air, which is the only apparent Place, according to the beſt Philoſophy, where ſuch inviſible Beings, not deſtitute of all Bodies, can poſſibly inhabit; it will juſtly deſerve our Conſideration, whether this be not the nobleſt Deſign and Uſe of our Air; tho' at the ſame time its loweſt Regions be an *Atmoſphere* alſo; or be uſeful in Reſpiration, in Refraction, *&c.* and ſo fitted as to elevate and let fall the Vapours belonging to our Earth, for the Support of the Creatures, in groſſer Bodies, inhabiting thereon.

See Prop. after my Boyle's *Lectures* p. 287—297. *or Serm. & Eſſ.* p. 170, —178. *Meteor*, p. 68—72.

(4.) The external Regions of Comets, which by paſſing through ſuch immenſe Heat when neareſt, and ſuch prodigious Cold when fartheſt off the Sun; and by the confuſed and Chaotick State of their Atmoſpheres, do evidently appear incapable of affording convenient Habitations for any Beings that have Bodies, or Corporeal Vehicles, whether viſible or inviſible to us; ſeem rather

rather fitted to cauſe the grand Mutations of Nature in the Planetary World; by bringing on *Deluges* in their Deſcent, and *Conflagrations* in their Aſcent from the Sun; as I have elſewhere more fully Diſcourſed. New Theory, 2*d Edit.* p. 437, 438. *and* p. 440, *&c.*

(5.) Theſe Comets, with their Atmoſpheres and Tails, ſeem alſo fitted, as to their external Regions, to be a very uneaſy, hot, and fiery Habitation when near, and a very uneaſy, cold, and chill one, when far off the Sun, and this both in their Surfaces, and in their Airs.

(6.) As to the Internal Parts or Regions of the Sun, Planets, and Comets, they ſeem to be Concave, and to include vaſt open Spaces within. This Conjecture which is no way contrary to any other Phænomena of Nature, I ground particularly upon the ſmall Inequality there is in Fact between the Polar and Equatoreal Semidiameters of thoſe Heavenly Bodies which have diurnal Revolutions about their own Axes, compared with the much greater Inequality there would naturally be between them, if they had not ſuch Central Cavities. For Example, If the internal Parts of the Earth were of the ſame Denſity with the External, it is Demonſtrated by Sir *Iſaac Newton*, that the Polar Semi-diameter or Axis would be about 17 Miles ſhorter than the Semi-diameter of the Equator. If the Central Parts were much Denſer than the reſt, (as on all mechanical Accounts they ought certainly to be) theſe 17 Miles would be mightily increas'd, and probably amount to ſome Hundreds. Yet is that Semi-diameter in Fact but about 31 Miles ſhorter than the other. Whence it is probable, that the greater Denſity in the deeper Regions, is compenſated by the leſſer Denſity, Princip. 2*d Edit.* p. 382—387.

Denſity, or rather total Cavity of the Central Regions themſelves. And this Reaſoning is ſtill vaſtly ſtronger in *Jupiter*; where the difference of Semi-diameters ought to be much more remarkable, and to amount to ſome thouſands of Miles, while yet it is therein but juſt ſenſible; and that only by the Uſe of the beſt Inſtruments and Obſervations we have in Aſtronomy.

(7.) It is not improbable therefore, that thoſe Central Cavities may be ſo fitted by Providence, as to afford Habitations to ſome Creatures, as well as the external Surfaces, the Land, the Water, and the Air, have appear'd to do; tho' this in different Circumſtances, as to the different Bodies, the Sun, the Planets, and the Comets. See Dr. *Halley*'s Conjecture to ſomewhat the like Purpoſe, *Tranſact. Philoſ.* No. 347. *for A. D.* 1716.

(8.) If the Sun has ſuch a Cavity for Habitation, it muſt be fenced from the Heat of his more external Parts by a vaſtly thick Wall or Partition; which that there may be even of many thouſand Miles, the prodigious largeneſs of its Diameter, and the little comparative depth of the penetration of Heat through ſolid Earth, do Demonſtrate. Nor would ſuch a central Cavity in the Sun be in danger of any pernicious Heat, tho' it were large enough to hold, on its inward Surface, as many Creatures as the external Surfaces of all the Planets and Comets put together could contain; as he that conſiders the Tables, *pag.* 54. and 56. before will eaſily believe. Perhaps ſuch a Degree of Heat may be deriv'd from the outward to the inward Regions, as will ſuit ſome of the Purpoſes of the Great

See pag. 54. prius.

Author

Author of Nature therein: But then all its Light muſt be deriv'd from ſome other Cauſe, than from the outward Parts of the Sun.

(9.) If the Planets, or any of them, have ſuch Cavities for Habitation; becauſe they keep nearly at the ſame Diſtance from the Sun, in the ſeveral Parts of their Courſe, their Heat as well as Light, muſt come moſt probably from within alſo, as not being ever Recruited in their Revolutions.

(10.) If the Comets, while they continue ſuch, have the like Cavities for Habitation; Part of their Heat, becauſe of their Acceſs to the Sun every Period, may be derived from it, and recruited every Revolution: But then all their Light, as well as that of the reſt, muſt be deriv'd from within alſo.

(11.) That the Earth in particular has ſuch a Cavity, ſeems clear from Scripture, as well as it may be conjectured from Aſtronomy. For when many, at leaſt, of the Souls departed out of the World, are there repreſented as *gone down* into the inviſible World; as *deſcended* into the Place beneath, or as *gone down quick into the Pit*; and when our Bleſſed Saviour is there ſtill repreſented as upon his Death, *going down into the Inviſible World, and deſcending into the lower Parts of the Earth*; nothing ſeems ſo agreeable both to Nature and Revelation, as this Hypotheſis; which ſuppoſes ſuch a Receptacle for Inviſible Beings beneath, as exactly anſwers to the foregoing Deſcriptions.

See Gen. xxxvii. 35. Num. xvi. 30, 33. Ezek. xxvi. 20. xxxi. 16. Rom. x. 7. Eph. iv. 9. 10.

(12. If there be any ſuch Cavities and Receptacles for living Creatures, and the Things neceſſary for their Suſtenance, in the Central Regions

Regions of the Sun, or of the Planets, or Comets, 'tis certain their State and Circumſtances muſt be very different from thoſe on the Surfaces of the Planets. They muſt all live in Concave Spheres, which muſt hinder all Intercourſe betwen them and this viſible World: Nor can they have any Philoſophical Evidence that there is ſuch an External World at all; which is the Caſe of the reſt of this Univerſe, as to us, if we, with all the viſible Stars, Comets and Planets, be our ſelves included in ſuch a Cavity; which is not abſolutely impoſſible to be ſuppos'd. But then, as to the particular Circumſtances of ſuch Creatures, their way of Living, and the Courſe of Nature and Providence, and Divine Revelation relating to them, I ſhall not venture here to propoſe any particular Conjectures about them; only hinting this, that the Power of Gravity from the External Parts being in this Caſe none at all, as we have elſewhere obſerv'd, there may be therein ſuch a World as is that we here ſee, with the like Sun, Planets, and Comets; only that they muſt be ſo much leſs in Quantity and Largeneſs, as the greater Narrowneſs of their Cavities requires: Yet ſtill ſuch as the Imagination will not be able to diſtinguiſh from our larger viſible Univerſe it ſelf.

See Math. Philoſ. *Prop.* 44.

N. B. I hope that all judicious Perſons will diſtinguiſh what I venture barely to *Conjecture* ſometimes in this, from what I uſually *Aſſert* in the other Parts of this Treatiſe: It being ever proper, if any one propoſes Conjectures to the World, which are often of conſiderable Advantage, as they afford Hints for Enquiry further, and Occaſions for the Diſcovery of Truth, to

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diſtinguiſh them ſtill from Aſſertions; which ought generally to be built on conſiderable Evidence, before they are propoſed as true to the World: Which Diſtinction between *Aſſertions* and *Conjectures* I always aim to make, and always beg of my Readers, that in their Peruſal of my Papers, they will ever make the ſame alſo.

PART VI.

Important Principles *of* Natural Religion, *Demonſtrated from the foregoing* Obſervations.

BY the *Obſervations* already made from the true Syſtem of the World, it appears,

(1.) That the Souls of even all Brute Creatures are *Immaterial*, *i. e.* not compos'd of that dull, unactive, inſenſible, ſolid, paſſive Subſtance, which we call *Matter*, or *Body*, and of which all the Viſible and Senſible World about us is compos'd. For it certainly appears, that all this Subſtance, which we properly call *Material Subſtance*, or *Body*, is ſo far from a Capacity of Senſation, Thought, Activity, and Moving it ſelf and the Body, which are the known Properties of the Souls of even Brute Creatures themſelves, that it is not capable of any active Property at all; being ever mov'd, impell'd, attracted, and directed entirely as other Bodies or Powers act upon it, and not otherwiſe. This I ſay is the natural Conſe-

Conſequence of all that Phyſical Knowledge of Matter or Body, which Obſervation and Demonſtration leads us to. We can Philoſophically trace material Impulſe, and the material Images of External Objects, in ſome Meaſure, even in Brutes, through the Organs of Senſe, up to the Brain, or the Fountain of Senſation and Action. But there Mechanical Cauſes end, and Material Effects ceaſe; there that Agent or Subſtantial Being, which Sees, and Hears, and Feels, and Taſtes, and Smells, and Joys, and Grieves, and Directs, and Moves, and Remembers, and Hopes, and Fears, is preſent, and directly comes to be conſidered by us. But then it comes to be conſider'd entirely as an Inviſible or Immaterial Agent, or Subſtance, different from the Eyes, and Ears, and Hands, or Feet, and Palate, and Noſtrils, and Nerves, and Brain, and Blood, and Animal Spirits of the Brute Creature; juſt as we conſider the Organiſt that guides and directs the Pipes, and Sounds, and Stops of his Organ, as entirely different from thoſe Pipes, and Sounds, and Stops themſelves. Not that I pretend to tell of what particular Kind or Sort of Subſtance, that Senſitive and Active Being is compos'd, either in Brutes, or in Men, or in any Superior, Inviſible, and Intellectual Beings. That Subſtance may be different in every different Kind. But that we do ſtill obſerve from their Phænomena, that theſe Souls are different in their Properties and Actions, in almoſt all their Properties and Actions, not only from their own Groſs Bodies, but in general from what we call Matter or Body, from all that we call Matter or Body in the Univerſe. Immaterial they are indeed, and

Different from the Material Body, according to all the Notions and Experiments we ever have of theſe Brutes, and of Matter. But that does not directly inform us *what* they are, becauſe we know not what *Subſtance* is in general, nor what the particular Subſtances of any particular Material or Immaterial Being are. But by comparing the Properties of Matter, with thoſe of the Souls of even Brutes themſelves, we plainly and evidently perceive that thoſe Souls are not Matter. 'Tis true, we cannot determine how far the Deſtruction of the groſs Body of a Brute affects the Soul, or ſenſitive Agent thereto united: We do not know whether thoſe Souls are Immortal or not: We do not know whether they utterly periſh with their Bodies; or whether they only continue in a kind of inactive inſenſible State, till they actuate other Bodies again or no, and ſo perpetually. And the Reaſon is plain, we have no way of knowing ſuch Secrets of Nature and Providence, about Inviſible Subſtances, by Obſervation, or Experiment: And the Author of Nature has not been pleas'd to diſcover ſuch Things to us, by Revelation. If I were to *Gueſs* where I cannot *Know*, I ſhould imagine that all ſuch Immaterial Souls do ever, by their peculiar Nature, perceive and feel whatever is preſent to them, and no more; and that they endeavour to act in a way ſuitable to the Impreſſions and Paſſions thereupon ariſing in them, and no farther: That therefore, when they are out of a Body, their Senſations are ſo few and narrow, and their Powers ſo ſmall, that they are in a ſort of Sleep, Silence and Inactivity; that when they are in Bodies, (which are moſt wonderful Structures and Machines, contriv'd

triv'd at once to convey the Impreſſions of moſt numerous, and even moſt diſtant Objects to them, and to follow their Directions and Actions thereupon,) while thoſe Bodies keep in Order, thoſe Souls are alive, vigorous, and active; but when the Bodies are diſſolv'd, or their Contexture deſtroy'd, their Souls return to their former State of Sleep, Silence, and Inactivity; though without a real Annihilation; and ſo without any Incapacity of Revival and Reactivity: I mean upon Suppoſition, that the Author of Nature, or any of thoſe Miniſters by whom he Governs the World, affords it another Opportunity for ſuch a Revival and Reactivity again. This is, I ſay, what I ſhould *Gueſs*, as to the State of the Immaterial Souls of Brutes, if I would indulge my ſelf in ſuch Uncertainties. And whether the *Pſalmiſt* does not favour ſuch a *Conjecture*, where he ſpeaks thus, *When God hideth his Face* from ſuch Creatures, *they are troubled: When he taketh away their Breath they die, and return to their Duſt: When He ſendeth forth his Spirit they are Created, and He reneweth the Face of the Earth:* I ſhall leave to the Reader's Conſideration. But as to the Propoſition it ſelf; I mean, that what perceives and acts even in Brutes, is a Being or Agent properly and entirely diſtinct from that Body in which it acts, and is truly a Being or Agent Immaterial. This I take to be the natural Reſult of Philoſophick Reaſoning, from Fact and Experience; and by no means to be ſet aſide, becauſe we are not able to ſolve all Difficulties thereto relating: Which we are rarely, or indeed never capable of doing, in the laſt Reſort, in any part of Knowledge whatſoever. But as

Pſal. civ. 29, 30.

to thoſe who, to avoid all ſuch Difficulties, pretend that Brutes have no Souls, no Senſation, no Action of their own, and are meerly Corporeal Clock-work, and Machines; they yield me this Point, that if they have Souls, and do really Perceive and Act themſelves, thoſe Souls, thoſe Principles of Senſation and Action, muſt be Immechanical, and Immaterial: But then, they pretend to diſbelieve that, which ſeems to me almoſt as plainly matter of Fact and Obſervation, as any of Mr. *Boyle*'s Experiments whatſoever. And I care not to anſwer ſuch an extravagant Objection, which it is next to impoſſible to ſuppoſe, that any ſober Propoſer can, in earneſt, believe himſelf in his own Propoſal of it. And when the Scripture aſſures us, that a *Righteous* or *Merciful Man regardeth the Life of his Beaſt*; and this in Oppoſition to the *Cruelty*, which the *tender Mercies of the Wicked* or *Savage Men* are affirm'd to have; it moſt naturally implies, that thoſe *Beaſts* are themſelves really ſenſible Creatures, and not incapable of feeling the Effects of the Care, or of the Cruelty of their Maſters towards them.

Prov. xii. 10.

(2.) We hence learn more certainly, that the Souls of Men are *Immaterial*. For if we have found that the lower Faculties and Operations of the Souls of Brutes, require us to allow them to be Immaterial, how much more muſt we do ſo as to Human Souls? For if we proceed higher to the Rational, the Intelligent, the Penetrating, the Free, the Active, the Sagacious Soul which is in Man; if we conſider its vaſt Capacities and Faculties; and that it can, and ſometimes does, act contrary to all the material Impreſſions or Temptations which the ſenſitive Soul lays before

before it; contrary to all worldly Views and Motives, all corporeal and terreſtrial Intereſts, and that it can and ſometimes does freely chuſe Poverty, Miſery, and Perſecution in this World, out of regard to God and Religion, and the Happineſs of a Future State; This Rational Soul, I ſay, muſt needs be of ſo vaſtly higher a Nature, of ſuch vaſtly nobler Faculties, of ſuch a vaſtly ſuperior Rank in the Creation, that He who can once ſuppoſe, that there is nothing in this Caſe but ſuch Matter as we have Knowledge of in the World, with its Accidents, is in a fair way to believe any Properties may belong to any Beings, and that there is really no Diſtinction between a Square and a Circle; no Difference between Strength of Reaſon, and the Sound of an Organ; no Preference between the Arguments uſed in a Theological Diſpute, and the Colliſion of Elaſtical Bodies in Motion; between a piece of Clock-work manag'd by Wheels and Springs, and an Human Soul govern'd by Reaſon and Religion; which Confuſion of Things, entirely different in their own Nature, ſeems to me ſo abſurd and prepoſterous, ſo wild and aukward, that I have not Patience to ſet about a more operoſe Confutation of it. Thoſe who are under any Temptation to believe ſuch Notions, which ſeems to me no leſs fooliſh than the wildeſt Dreams of Ignorance and Superſtition themſelves, may conſult * Dr. *Clark*'s excellent Confutation of a late Writer upon this Head. Tho', after all, I can hardly think that Writer weak enough to have been in earneſt; and if he were, I ſhould have thought that too much Honour was done him and his crude Notions, when they were vouchſafed the favour of ſo maſter-

* *See his Letter to Mr.* Dodwell, *and its four Defences.*

ly a Confutation. But this is too like a Digreſſion to be farther inſiſted on in this Place. However, we may obſerve here, how agreeable this Immateriality of Human Souls is to the Sacred Hiſtory of their firſt Original; where after the
Gen. ii. 7. *Lord God had formed Man out of the duſt of the Ground*, the material Body, perhaps with its ſenſitive Soul alſo; He diſtinctly, from above, infus'd the Rational: *He breathed into his Noſtrils the Breath of Life, and Man became a living Soul.*

(3) We hence learn not only the *Immateriality*, but the *Immortality* alſo of Human Souls; or that the Deſtruction and Diſſolution of the Body, with its Senſations, will not deſtroy or diſſolve the Rational Soul united thereto; but will leave it ſtill capable, not only of exiſting, but of acting in another State; if it pleaſe God ſo to diſpoſe of it, that it may have proper Opportunities for doing ſo. So far, as I take it, true Philoſophy carries us here; I mean, it obliges us to put ſuch a difference between the rational Soul, and the brute Body, that the Ruin of the one will no way infer the Ruin of the other; and that therefore, ſince Divine Revelation aſſures us of the living and acting of the Soul in the intermediate State, and alſo of its Return to the Body, and acting therein again after the Reſurrection, this is all agreeable to ſound Reaſon and Philoſophy, to good Senſe and the Laws of Nature: Tho' ſtill all this, without aſſerting ſuch a neceſſary Immortality, or Eternal Duration in Happineſs or Miſery, as is independent on the Power, and Will, and Laws of the Author of Nature; to which all the Enjoyments, and Faculties, and Perceptions of a Human Soul,

may

may ſtill be owing hereafter, altho' the Subſtance it ſelf of that Soul ſhould, of it ſelf, when once created, continue to exiſt, as all real Beings ſeem to do, without any particular Interpoſition of Providence for ſuch their Continuance. Philoſophy, Mathematical and Experimental Philoſophy, obliges us to ſuppoſe, that the Soul will continue to exiſt after Death, and will therefore be ſtill *capable* of Action and Enjoyment, of Happineſs and Miſery. Divine Revelation aſſures us this ſeparate Soul *ſhall* Act and Enjoy, ſhall partake of Happineſs or Miſery in a lower State and inferior Degree before, and in an higher State and ſuperior Degree after the Reſurrection: So that Reaſon and Religion ſupply, and ſupport, and confirm each other, and, upon the whole, aſſure us of the Truth of this grand Principle of all Religion, eſpecially of the Chriſtian, That this Life is not the only, or the principal Stage on which we are to Act; that this World is not the only or the principal Time for our Happineſs, or Miſery; but that, after this frail and mortal Life is ended, which is only a ſhort State of Tryal and Probation, we muſt live a longer one of Enjoyment hereafter. Which Truth is of that Importance for us to be ſatisfy'd in, that nothing of either Natural or Supernatural Knowledge, which tends thereto, ought to be neglected by us. Nor may we here omit the exact Agreement of this Natural Truth of the *Immortality* of Human Souls with Divine Revelation, particularly with our Saviour's own important Words upon this Head: *Fear not them which kill the Body, but are not able to kill the Soul: but rather fear him, who is able to deſtroy both Soul and Body in Hell.* Mat. x. 28.

(4.) We

(4.) We hence learn the *Being of God*, the firſt Intelligent Cauſe and Author, the juſt Owner and Poſſeſſor, the Supreme Lord and Governor, the conſtant Preſerver and Diſpoſer of all Things. This Foundation of all Religion, the Belief of a Supreme Deity, is the firſt, the moſt natural and obvious Deduction of Human Reaſon, even from the Contemplation of the moſt common and ordinary Appearances of Nature; from the Growth of every Plant, and the Succeſſion of every Seaſon, and the general View of every Heavenly Body, and every Creature about us. And there have certainly been no Nations or People, of the uſual Capacities of Mankind, but have ever drawn this Conſequence in all Ages of the World. So that if this Inference be not the *Voice of Nature* it ſelf, we ſhall be at a great loſs to find other Truths, requiring any Reaſoning at all, that can deſerve to be ſo ſtiled. And no wonder, ſince the Argument is the very ſame by which, from the Contemplation of a Building, we infer a Builder; and from the Elegancy and Uſefulneſs of each Part, we gather he was a skilful Architect; or by which from the View of a Piece of Clockwork, we conclude the Being of the Clockmaker; and from the many regular Motions therein, we believe that he was a curious Artificer. Which Deductions he who is not *Able* to make, has not the *Reaſon*; and he that will not allow them to be *Juſt*, has not the *Honeſty* of the meaneſt Countreyman. 'Tis true, that if this ſort of arguing were confin'd to Childhood, or Folly; to the Age of Ignorance, or the Temper of Ideots; if the more nicely we viewed the World, the leſs Reaſon we found

found to admire its Contrivance; and when we were come to the top of Enquiry and Examination, we loſt all the Occaſions of our Wonder and Adoration: If, I ſay, this were the Caſe, a ſober Perſon might think fit to ſuſpend his Aſſent, and to caſt about for ſome other Solution of the Phænomena of Nature. But in caſe the wiſe and examining Man ſtill finds vaſtly ſtronger and more numerous Reaſons for the Acknowledgment of the Divine Exiſtence, than the Fool, or the careleſs Enquirer does; ſo that if he ſpends his whole Life in the purſuit of this ſort of Knowledge, he perceives new Arguments every where crowd upon him to the ſame purpoſe; which is the known Caſe, as to Experimental Philoſophy, at this Day; He who is ſtill reſolv'd to ſuſpend his Aſſent, and either to wrap himſelf up in wilful Scepticiſm, as if he knew nothing; or to try how far he can be abſurd enough to believe, that the World is it ſelf the only God, the only Eternal, Omnipotent, Allwiſe Being; or, which is yet more abſurd, that all the Wonders in its Contrivance came meerly by Chance and Accident; and will continue by Chance and Accident, till by the like Chance and Accident they all come to nothing again: He, I ſay, who acts thus, does certainly, if ever Man did, *dare operam ut cum ratione inſaniat; takes great pains to ſhew himſelf, with great Learning, the moſt egregious Fool in the World.* While true Wiſdom or Philoſophy would teach him to aſſent to the Apoſtle *Paul*, when he juſtly affirms, That *the Inviſible Things of God are clearly ſeen from the Creation of the World; being underſtood by the things that are made, even his Eternal Power and Godhead. So that* Rom. i. 20.

Men

Men are without Excuſe for Atheiſm. But this general Reaſoning is ſo obvious, and ſo common, that I ſhall not here enlarge upon it; but rather apply my ſelf to Demonſtrate the particular Attributes and Operations of God from the particular Phænomena of the World already ſet down; as being a thing leſs common, and of greater Advantage. Accordingly from what has been before advanc'd, we learn,

(5.) That the World has not been from all Eternity, but that God was the *Creator* of it, and that He, and He alone, at firſt Diſpoſed and Ordered the ſeveral Parts of the Univerſe, into that wiſe and wonderful Structure in which we now ſee them. I do not here mean to intermeddle with that more intricate Problem of the proper *Creation* of the *Matter of the Univerſe out of Nothing*; becauſe the Phænomena of Nature give us no Indications either way: nor, as I underſtand it, does Divine Revelation ever directly concern it ſelf with it. Only, that I may not be miſtaken, I declare my own Opinion to be ſtill, as it has ever been, againſt the Eternity of Matter, and for its Original Creation out of nothing by the Almighty Power of God. But then, I am not only of *Opinion*, but am fully *Satisfy'd* from the plain Phænomena of Nature, that the World was, in the more ordinary Senſe, originally Created, and at firſt put into that State in which, for the main, we ſtill find it by the Divine Power, Wiſdom and Goodneſs. I have already ſhewed, that the preſent Syſtem of Things, acting according to thoſe Laws of Motion and Nature which are now fixed in the World, cannot poſſibly have been *a parte ante*, and cannot poſſibly be *a parte poſt* Eternal: Much leſs is it poſſible, that one

Pag. 88, 89, 90, prin.

one little Corner of it, ſuch as our Earth, ſhould have been, or ſhould be hereafter Eternal by it ſelf. This pretended Eternity of the World, is indeed ſo far from the Reſult of any juſt Reaſoning, or Philoſophical Evidence, (and to any Divine Revelation it never yet, that I know of, made the leaſt Claim;) that I dare appeal to the entire Syſtem of Nature, whether there appear one ſingle Argument for, or Indication of ſuch an Eternity, either *a parte ante*, or *a parte poſt*, in the whole Univerſe. I profeſs, I know none: And unleſs Men be ſo weak as to leave Fact, Nature, Experiments, and Mathematicks, for the Subtilties of Metaphyſicks, and the Cobwebs of Abſtract Notions, they muſt believe the World not to have been, nor to be, Eternal. But for thoſe that are ſubtil enough to deny the Reality of Motion, or the Freedom of Human Actions, becauſe they are not able to account Metaphyſically for Motions Migration from one Subject to another, as they ſpeak, or for the Mode and Seat of Human Freedom in the Soul; while their own Senſes and Obſervations do every Day of their Lives aſſure them of the Reality of them both; they are Perſons fit for the Atheiſts Purpoſe in this Matter, and will be proper Patrons for the Eternity of the World. He that, with *Ocellus Lucanus*, can prove the World to have *no End* in Point of Duration, becauſe it is of a round Figure, which certainly in another Senſe has *no End*; or He that can demonſtrate from abſtract Reaſoning about the Nature of Matter, and that Equality of Motion he may ſuppoſe to be in every Part of the Univerſe; that a certain Clock or Watch will of it ſelf go for ever, tho' at the ſame time he ſees

ſuch wearing of the Wheels and Pivots, ſuch decay of the Spring, and ſuch Ruſt and Foulneſs over the whole, (beſides the Neceſſity of its being wound up every Revolution) as muſt, by Calculation, put a Stop to its Motion in 20 Years time; Such as theſe, I ſay, are alſo Perſons rightly diſpoſed for the ſame Doctrine of the World's Eternity. But for the reſt, I mean for all the ſober Part of Mankind, who are govern'd by common Reaſon and Experience, they will, I believe, yield to the Facts and Arguments already uſed; and becauſe 'tis thence certain, that the preſent World is not, cannot be naturally Eternal, will readily aſcribe its Origin to the great Author of Nature, to God himſelf: They will eaſily allow, that the *Belief in God the Father Almighty, as the Maker of Heaven and Earth*, is no leſs a certain Doctrine of Natural Religion, than it is a primary undoubted Article of the Chriſtian Faith: Not will they wonder, that the *Jewiſh* Legiſlator begins his *Archæology* with this Aſſertion, *In the Beginning* Gen. I. 1. *God created the Heaven and the Earth*; as a very proper, a very neceſſary, and certain Preliminary to that Divine Legiſlation he was to lay down, in vertue of the Authority of the ſame great Creator.

(6.) We learn from the foregoing Syſtem of the World, that God, the Creator of it, is an *Eternal* Being, and has exiſted before all Time, and all Worlds, even abſolutely from everlaſting. This Attribute of God, of a proper *Eternity*, or *Neceſſity of Exiſtence*, without any Cauſe or Beginning whatſoever; (for theſe Properties ſeem to me to infer each other, if not to be one and the ſame;) appears to be one of the hardeſt Notions that

that a Human Mind can take in. Yet is it the moſt certain of all others. For 'tis moſt apparently plain, that if the Firſt Cauſe and Original Being does now, or ever did exiſt, as we have ſhew'd he now does, and ever did ſince the World began; He muſt have exiſted from all Eternity, otherwiſe He muſt have at firſt *produced* himſelf *into Being* when He *was not*; or muſt *Act* and *Create* before He *was*; which all the World owns to be abſolutely impoſſible. This Attribute, we ſee, is not deriv'd from any particular Phænomenon of the Univerſe; but from them all, and every one together. Nor do any who believe the foregoing Corollary, concerning the Exiſtence of God, ſo much as pretend to doubt of the *Eternity* of that Exiſtence; ſo that I ſhall not need to enlarge any farther upon this Attribute in this Place. Only we may obſerve, how agreeable this *Eternity* of God, here gathered from the Light of Nature, is to Divine Revelation, which aſſures us, that *Before the Mountains were brought forth, or ever he had formed the Earth or the World, even from Everlaſting to Everlaſting He is God.* *Pſal.* xc. 2.

(7.) From the foregoing *Syſtem* we learn, that God, the Creator of the World, does alſo exerciſe a continual *Providence* over it, and does interpoſe his general, immechanical, immediate *Power*, which we call the *Power of Gravity*, as alſo his particular immechanical *Powers of Refraction, of Attraction, and Repulſe, &c.* in the ſeveral particular Caſes of the Phænomena of the World; and without which all this beautiful *Syſtem* would fall to Pieces, and diſſolve into Atoms. On which Occaſion, the *Apoſtolical Conſtitu-*

Conſtitutions ſpeak as agreeably to Philoſophy as to Religion, when they ſay, *The whole World is held together by the Hand of God.* For, as we have already obſerv'd, though we ſhould not think it neceſſary to ſuppoſe a particular Interpoſition of the Supreme Being, in the Conſervation of the Natures or Exiſtence of Things, and of their Original Projectile Motions, which once begun may continue of themſelves, without any new or particular Support; (in which Caſe however not a few think it neceſſary to introduce the ſame, and that the *Conſervation* of Things is no other than a kind of *continual Creation* of them;) tho', I ſay, we ſhould not think it neceſſary to ſuppoſe, that continual interpoſing Providence in the material World, in order to its Preſervation, yet can we not avoid allowing it in that grand immechanical Power of the Univerſe, I mean that of Gravity, and in the other immechanical Powers of the ſame Nature above-mentioned. Theſe do continually act in the World, and alter the Places and Motions of Bodies perpetually; which makes me commonly chuſe to call them here *Powers* rather than *Laws*, as the *Power* of Gravity or Refraction, rather than the *Law* of Gravity or Refraction; and ſo for the reſt. For this I take to be the Difference between a *Power* and a *Law*, ſpeaking ſtrictly; that a *Law* belongs to ſuch Rules as neceſſarily flow from ſome Property of Bodies, without any new Action exercis'd thereupon; as that *Bodies once in Motion continue for ever to move with that Degree of Velocity which they once have, without Intermiſſion, along thoſe ſtrait Lines, according to which thoſe Motions are already directed*: But a

L. V. 7. init.

Power

Power is here *Such a Rule, by which the Bodies are conſtantly moved out of thoſe Lines, and from thoſe Velocities they naturally had, into other Lines and Velocities diſtinct from them*; which plainly implies a real Action, a true Force, Impreſſion or Influence actually exerted upon them; whether we call it Impulſe, or Attraction, it matters not; and this perpetually alſo: Which is therefore quite different from the foregoing Caſe, as to the ordinary Mechanical Laws of Motion; and ſuppoſes a real Agent, and He ſufficiently Active, and Powerful alſo to remove all ſuch Bodies through the Univerſe perpetually. For I deſire thoſe who think otherwiſe, to tell me, how unactive Matter, without ſuch a continual Exerciſe of Force upon it, can be continually oblig'd to leave its natural, even, rectilinear Motion, and to move faſter, or ſlower, in a curve Line? Can it, of it ſelf, admit of a *Law of Gravity*, and of it ſelf ever exert this *Clinamen*, this *Departure* from its proper Courſe? But this is to ſuppoſe it not *unactive Matter*, but an *intelligent Self-moving Being*, which alone is capable of underſtanding of Laws, and acting according to them. In ſhort, it ſeems to me moſt evident from the Phænomena of the World, that all ſuch Laws or Powers as we are now ſpeaking of, which are many and wonderful, and yet abſolutely neceſſary to the Preſervation of the preſent Syſtem, are the real Effects of the continual *Power* and *Providence* of God himſelf, for the Conſervation of the *Univerſe*; and that whenever he pleaſes to ſuſpend ſuch Exerciſe of that Power and Providence, the World it ſelf will diſſolve into Atoms, and its preſent Form

ſuffer an utter Deſtruction. I conclude this Head in the elegant Words of the *Pſalmiſt*, when he celebrates the great Creator, for ſome remarkable Inſtances of his *Providential Care* over his Creatures: *O Lord, how manifold are thy Works! in Wiſdom haſt thou made them all: The Earth is full of thy Riches. So is this great and wide Sea, wherein are Things creeping innumerable, both ſmall and great Beaſts. There go the Ships: There is that Leviathan, whom thou haſt made to play therein. Theſe wait all upon thee; that thou may'ſt give them their Meat in due Seaſon: That thou giveſt them they gather: Thou openeſt thine Hand, they are filled with Good. ---The Glory of the Lord ſhall endure for ever; the Lord ſhall rejoice in his Works. ---I will ſing unto the Lord as long as I live; I will ſing Praiſe unto my God while I have my Being.* But to proceed. We farther learn from this Syſtem of the World,

Pſal. civ. 24, &c.

(8.) That this Supreme God, the Creator and Preſerver of the World, and the Author of the Power of Gravity, and of all other the Immechanical Powers in the Univerſe, is a *Free Agent*, no way limited by any *Neceſſity* or *Fate*, but acting ſtill by *Choice*, and according to his own *good Pleaſure*. This Attribute of the Divinity, without which the Supreme Being himſelf would be below Mankind, a meer Fatality, and no way worthy of any Veneration, and Love, and Gratitude from his Creatures, is fully demonſtrated under ſo many of the foregoing *Obſervations* from the Syſtem of the World, that I ſcarce need quote any one of them in Particular. And I appeal to all that we now know of this entire Univerſe about us, whether

whether there be one ſingle Indication of ſuch a rigid Fatality, and Neceſſity therein. 'Tis true, ſuch ſtrange Reaſoners as *Hobbs* and *Spinoza*, &c. pretend by Metaphyſick Arguments to demonſtrate this Fatality and Neceſſity, even as to the Actions of the Supreme Being, or τὸ πᾶν it ſelf. But then, they do by the like Metaphyſick Reaſoning, as ſtrongly pretend to demonſtrate the ſame Fatality and Neceſſity of Human Actions alſo; which laſt we are ſure, from our own certain, conſtant Experience, all our Lives long, is utterly falſe and ridiculous; and therefore we have no Reaſon to depend on the like Subtilties in the other Caſe: Eſpecially while inſtead of Metaphyſick Subtilties on one Side, we produce the plaineſt Experiments, Obſervations, and Demonſtrations from Nature, and the Syſtem of the Univerſe, on the other: And while Dr. *Clarke* has, with great Sagacity, ſhew'd the Inconſiſtency of that Metaphyſick Reaſoning, and the Freedom of the Divine Being, and of Human Actions, even in their own Way, both in his Sermons at Mr. *Boyle*'s Lectures, and Anſwers to an Anonymous Author already quoted, to which I ſhall refer thoſe Readers, who have a mind to deal in that way of Reaſoning. As for my ſelf, while I clearly ſee that the conſtant Experience of all Men, and the entire Phænomena of the whole Univerſe, directly prove the Freedom of Human and Divine Actions, I am not much concern'd what may be alledg'd to the contrary from Metaphyſick Uncertainties, eſpecially when I find it every-where confirm'd by Divine Revelation alſo; which always teaches us to render ſuch Praiſe and Thankſgiving to Almighty God, for the Mercies

of Creation and Providence, as would be perfectly ridiculous, if all ſuch his Operations were entirely fatal, and involuntary. *Bleſs the Lord, O my Soul, and all that is within me, bleſs his Holy Name. Bleſs the Lord, O my Soul, and forget not all his Benefits: Who forgiveth all thine Iniquities, who healeth all thy Diſeaſes: Who redeemeth thy Life from Deſtruction, who crowneth thee with loving-Kindneſs, and tender Mercies. Bleſs the Lord, all his Works, in all Places of his Dominion: Bleſs the Lord, O my Soul.*

Pſal. ciii. 1.

(9.) We learn from the true Syſtem of the World, that this Supreme God is an *Intelligent* and *Omniſcient* Being, and that he knows the entire State and Condition of every Body contain'd in this entire Univerſe, at what Diſtances, and in what Circumſtances ſoever; and that in every Moment of Time from the Beginning of this Syſtem, till its Concluſion. This is deriv'd from Obſervations 21ſt and 22d foregoing; and is a moſt unqueſtionable Deduction from the Phænomena of the Univerſe. I uſe the Word *Omniſcience* here, as ſuch Words are commonly uſed in Scripture, and Ancient Authors, for ſuch a Degree of Knowledge, whether in it ſelf abſolutely infinite or no, which extends every-where to the whole viſible Univerſe, and takes in all the particular Parts of the ſame, to the utmoſt Limits of our Examination and Computations, without Exception. For in this Senſe only, can the Phænomena of Created Beings, which muſt be every way finite, become Demonſtrations of the Attributes of their Uncreated Original Creator, which alone can be, ſtrictly ſpeaking, eſteemed abſolutely

abſolutely Infinite. Nor are we here, or in other Caſes, concerned any farther. For if the Supreme Author of our Univerſe, does certainly and exactly know whatſoever is, or is done in this Univerſe, what does it concern us, whether he equally knows whatſoever is, or is done in any other Inviſible or Imaginary Syſtems beyond it? Although he who believes that this Omniſcience, or other ſuch infinite Attributes, belong truly to the Supreme God, its Author, to the utmoſt Extent of this grand Syſtem, muſt be a very ſtrange Perſon, if he can deny, or doubt whether the Omniſcience of the ſame Supreme Being, extends to the reſt of the other inviſible Syſtems alſo; ſuppoſing there be ſuch other Syſtems, and that they are the Workmanſhip of his Hands alſo, as well as ours. All which confirms the Words of *Elihu*, when he thus exhorts the great Example of Patience; *Hearken unto this, O Job, ſtand ſtill and conſider the wondrous Works of God. Doſt thou know when God diſpoſed them, and cauſed the Light of his Cloud to ſhine? Doſt thou know the Balancings of the Clouds, the wondrous Works of him which is perfect in Knowledge?* Job xxxvii. 14, 15, 16.

(10.) We learn further from the true Syſtem of the World, that this Supreme God does not barely know and underſtand all the Bodies, and all that is done by all the Bodies, in this entire grand Syſtem, but he moſt *Wiſely* and *Prudently*, and *Sagaciouſly Orders and Diſpoſes of all the ſaid Bodies*, and particular Syſtems thereto belonging. This is ſuch a known and frequent Conſequence of the foregoing *Obſervations* from the true Syſtem of the World, that almoſt one half of them demonſtrate the un-

doubted Truth and Certainty of it. Nor could there be any Occaſion for enlarging on this Head, were it not that the Moral or Living World, does not here always ſeem to agree with the Natural or Aſtronomical one. In the latter there is plainly and every where Marks of ſuch Exactneſs, Harmony, Prudence, Sagacity, Wiſdom, and Conduct, that not only perfectly Convinces, but Amazes and Aſtoniſhes us, even all of us, who thoroughly conſider the particular Inſtances, the innumerable, clear, irrefragable Inſtances of the ſame, in every Part of the Univerſe: And he muſt be ſtupid to the utmoſt Degree, who can go a Courſe of Mechanicks, of Anatomy, of Botanicks, and eſpecially of Aſtronomy, without the moſt ſatisfactory Conviction in this Caſe. Thoſe natural Sciences, particularly Aſtronomy, will fully demonſtrate what the Sacred Writings have already inform'd us of; not only that *God telleth the Number of the Stars, and calleth them all by their Names*; that *great is our Lord, and of great Power*, and that *of his Underſtanding there is no Number*; but alſo, that *His Works are manifold, and in Wiſdom has he made them all.* But then, how it comes about that we do by no means perceive the ſame Exactneſs and Harmony, in the Moral and Living World, which we everywhere ſee in the Material and Phyſical, is a great and noble Problem; though not belonging to this Place. I have my ſelf occaſionally touch'd upon it in my other Writings; but acknowledge it to deſerve a much larger and fuller Diſquiſition. In the mean time, I muſt confeſs, that I have met with no Accounts thereto relating, ſo Authentick, ſo Rational and

Pſal. cxlvii. 4, 5.

civ. 24.

ſo

ſo valuable, as thoſe we have in an Ancient, but too much deſpiſed Book of Primitive Chriſtianity; I mean the *Recognitions of Clement*; which I ſometime ſince Tranſlated into *Engliſh*, for the Advantage of the Unlearned, but Inquiſitive Reader; to which therefore I muſt refer him for his Satisfaction in this Caſe. Only ſo far the preſent Propoſition may juſtly tend to his Satisfaction, as it certainly Demonſtrates the Proportion, Harmony, and Decorum every where provided for by the Supreme Being in the Natural World, and by conſequence affords us the greateſt Reaſon to believe, what by the Light of Nature we cannot but expect from Him, that in the laſt reſort and upſhot of Things, we ſhall find the ſame Proportion, Harmony, and Decorum provided for, with regard to all his Living and Rational, that is, to his Principal, which are already ſo remarkable and ſurprizing, as to the reſt of his Inanimate and Irrational, which are but his Inferior Creatures.

(11.) We learn farther from the true Syſtem of the World, that the Supreme God, who Made and Governs it, is a moſt *Powerful* and *Almighty Being*; whom nothing can reſiſt, and againſt whom nothing can oppoſe it ſelf in the whole Creation. This is not only the natural Reſult of this World's derivation from God, and its receiving all its Powers and Abilities from him; which muſt needs imply, that the Author of them all is ſtill of greater Power; and that no created Might can oppoſe it ſelf againſt that Might by which it was it ſelf created; but is a direct Conſequence from the 23d Obſervation before-going. And that we may have ſome particular Notion of the Greatneſs of

the Divine Power, and Almighty Efficacy in this our own Syſtem, let us conſider the Greatneſs of the Bodies it every where moves; and the Velocity with which it moves them. The former you may find in the Table, *pag.* 56. and the latter in that *pag.* 53. whereby it appears, that the Planets alone, which are continually moved, are together above Four Hundred Millions of Millions of Cubical Miles in Magnitude; that the Velocity wherewith they are mov'd, in their Annual Motion, is, at a mean, about 52000 Miles in an Hour; and that the Velocity of the Corpuſcles of Light is ſtill vaſtly greater, and no leſs than Six Hundred and Fifty Millions of Miles in the ſame time; and all this has been ſo continually from the beginning of the whole Syſtem to this very Day; and that without the leaſt proper Reſiſtance or Oppoſition from either any of theſe Bodies themſelves, or from any other Power or Agent whatſoever. On which account we may every one of us well ſay with Holy *Job*, after God had made an Eminent Repreſentation to him of his own Omnipotence, and of *Job*'s Weakneſs;

Job xlii. 2, 6. *I know that thou canſt do every thing, and that no Thought of thine can be hindred:—Wherefore I abhor my ſelf, and repent in duſt and aſhes.*

(12.) We learn farther from this true Syſtem, That the Supreme God, who made and governs the World, is every where ſubſtantially and really *preſent* through the whole; or is at all Times, and in all Places, *Omnipreſent*. This is a moſt direct Conſequence of the Divine Knowledge, and Wiſdom, and Power, the Attributes and Actions of the Supreme Being, continually exerted throughout the whole Univerſe.

Nor

Nor can we any more conceive them actually exercis'd *where*, than *when* that Being, whose Attributes and Powers they are, does not it self exist; which last is by all Men allow'd to be grosly absurd and impossible. Nor does either the Sun, or any other Being, afford us any thing, like a Virtual, as distinct from a Substantial Presence and Efficacy. The Sun indeed sends out Rays of Light, which Rays operate where the Sun is not: But then both of them operate only where themselves are. Nor is any other Notion consistent with common Sense, or the possibilities of Things. For to say that a Being Acts *where* it is not, is to say in effect, that *Nothing* Acts in that place; or that the *Effect* produc'd, has in that Place *no Cause* to produce it; which are the grossest Absurdities and Contradictions possible. But then, as to the Vastness of the Extent of this Presence of God, through this grand System, including all the Systems of the Fixed Stars also, it is to us hitherto unlimited and undetermin'd; tho', in all probability, in it self not really Infinite. However, so far we are certainly upon Fact to suppose the Divine Omnipresence to reach, and to be present, as we discover the Effects of the same; I mean so far as the visible Universe extends; which we know, on the lowest Computation, must be nearly that of a Cube of 1,400,000,000,000 Miles Diameter, which contains near 3,000,000,000,000,000,000,000,000,000,000,000,000, *i.e.* three Sextilions, or three Millions of Millions of Millions of Millions of Millions of Millions of Cubical Miles. An amazing Space

this, and as to any Power of Imagination, ſcarcely to be diſtinguiſh'd from Infinite Space it ſelf? And ſo far, to be ſure, the Omnipreſence of God extends it ſelf. Nor can even theſe Limits incloſe, or limit the Preſence of the Supreme Being; who as He is by Demonſtration preſent every where within, and between all the Parts of the ſeveral immenſe Syſtems, ſo, no queſtion, is his Preſence extended as well beyond the Grand Syſtem it ſelf, as we know it is beyond this Particular Syſtem wherein we live. But ſince the vaſt Viſible Syſtem of the Univerſe is that with which we are alone concern'd, and ſuch as even wearies and amazes our Faculties, when we attempt ſo much as to imagine its Immenſity, I ſhall wade no farther into that unfathomable Abyſs of Infinite Extramundane Space; the nicer Conſideration of which, like that of Infinite Duration or Eternity, is evidently too large for our finite Thoughts; and does ever more Aſtoniſh and Confound, than Profit and Edify Mankind. And no wonder, ſince 'tis highly probable that both of them, as to their inmoſt Nature, and largeſt Extent, are alone knowable by that High and Lofty One, who, in the Prophet's Expreſſion, *Inhabits Eternity*.

Iſa. lvii. 15.

I conclude this Head in the appoſite Words of the *Pſalmiſt*, of *Jeremiah*, and of the *Apoſtolical Conſtitutions*, which ſhew that Reaſon and Revelation agree in this important Attribute of the Divine Omnipreſence. *If*, ſays the *Pſalmiſt*, *I aſcend up into Heaven thou art there: If I make my Bed in Hades, behold thou art there. If I take the Wings of the Morning, and dwell in the uttermoſt parts of the Sea; even there ſhall thy Hand lead me, and thy right Hand ſhall hold me,*

Pſ. cxxxix. 8, 9, 10.

me. And, ſays God by *Jeremiah*, *Am I a God at hand, and not afar off? Can any hide himſelf in ſecret places that I cannot ſee him? ſaith the Lord. Do not I fill Heaven and Earth? ſaith the Lord.* And ſay the *Conſtitutions*, *Thou art He who art in Heaven; He who art on Earth; He who art in the Sea; He who art in finite Things, thy ſelf unconfin'd by any thing. For of thy Majeſty there is no Boundary. For 'tis not ours, O Lord, but the Oracle of thy Servant who ſaid*; And thou ſhalt know in thine Heart that the Lord thy God He is God, in Heaven above, and on Earth beneath, there is none beſides thee.

Jer. xxiii. 23, 24.

L. VII. 35.

Deut. iv. 39.

(13.) We learn farther from this Syſtem, that the Supreme God, the Maker and Governor of the Univerſe, is, in his own Nature and Subſtance, *Immaterial.* This is alſo a moſt direct Conſequence from the true Syſtem of the World, whereby it has appear'd that God, the only Author of the Power of Gravity, does act, and is preſent to the inmoſt Parts of all ſolid Bodies; nay that he is equally preſent, and equally acts in thoſe inmoſt Parts of all ſolid Bodies, as in any empty Spaces themſelves, and withal that this Action upon all Bodies is not like to material and mechanical Impulſe, which is ever on the Surface only; but penetrates thoſe Bodies themſelves, and every where cauſes a Gravitation, not according to the Surface, but according to the entire ſolid Content, or Quantity of the real Matter it ſelf, contain'd in every one of thoſe Bodies. This Property is highly remarkable, and of great Conſequence againſt thoſe who are unwilling to allow any real Being but Matter in the Univerſe. Whereas it has formerly

merly appear'd, that both the Senſitive Souls of Brutes, and the Rational Souls of Men, are *Immaterial*; and it does now moſt evidently appear, that the Supreme Being himſelf is alſo *Immaterial*; that is, it appears that the entire nobleſt Parts of the Univerſe, all the Living, Active, Thinking, Enjoying Parts of it, for whoſe Sake alone the reſt of it could be made, together with the Almighty Maker himſelf, are really *Immaterial*. So little do the Wiſhes, and Deſires, and Fancies, and Hypotheſes of the Old and New Atheiſts, agree with the true Syſtem of the Univerſe! And ſo exactly do the wiſeſt Notions, and Inclinations, and Doctrines, and Aſſertions of the Patrons of God and Religion, in all Ages, appear to correſpond to the ſame! I heartily wiſh, that ſuch Perſons would well conſider of this Obſervation; and no longer make uſe of thoſe ſmall Arguments, to take away the Being and Attributes of God; which ſtill appear, when we come to real Fact, Experiment, and Demonſtration, to be as little agreeable to Philoſophy and Mathematicks, as they are in themſelves Impious, and Blaſphemous againſt their great Creator and Benefactor. Nature as well as Scripture teaching us, that *God is a Spirit*; and that by Conſequence, *they that worſhip Him muſt worſhip Him in Spirit and in Truth.*

John iv. 23, 24.

(14.) We learn moreover from this true Syſtem of the World, that the Supreme God, the Maker and Governor of the Univerſe, is a *Good* and *Beneficent* Being, and one that takes Care of the Welfare and Happineſs of his Creatures. This is a direct Conſequence from no ſmall Number of the Obſervations foregoing, which

which ſhew the great Care he has taken of the Situation and Motion, and Circumſtances of the ſeveral Planets, at due Diſtances from the Sun, and from one another, that ſo they might be the moſt commodious and comfortable Habitations for the Creatures that were to live upon them. And the ſame might be more diſtinctly and particularly obſerv'd as to our Earth, and its Inhabitants, if this were a proper Place for it. But this has been ſo frequently and fully done already, that I ſhall rather chuſe to inſert what has already been excellently ſaid by others in the Eighth Part; or to refer my Reader to them here, than to repeat thoſe Obſervations in this Place. Upon the whole, the Proviſion that is made by the Divine Providence for Men, and all Creatures living, which alone are capable of the Goodneſs and Beneficence of the Creator, both in their Entry into, and during their entire Continuance in this World, is ſo ample, ſo abundant, ſo ſurprizing, that he who carefully conſiders the Particulars in all Sorts and Species of Animals with us, and eſpecially in Man, the Lord of them all, will be ſoon obliged not only to grant, that God is a Beneficent Being, but alſo, with the *Pſalmiſt*, to Admire and Adore, and *Praiſe the Lord for his Goodneſs, and for his wonderful Works to the Children of Men.* And this Inference is the more juſt, becauſe the Infinite Perfection, and Self-ſufficiency of the Divine Nature, does ſo entirely privilege him from all Want, and from all expectation of Increaſe of Happineſs from any of his Creatures, that every one of the Inſtances of his Beneficence, both in the Creation and Conſervation, and Proviſion for thoſe Creatures, muſt needs be

See Dr. Moore *againſt* Atheiſm *in Mr.* Ray's *Wiſdom of* God, *&c.* Part II. *C.* 1, 2. *Dr.* Cheyne's *Philoſophical Principles of* Natural Religion. Part I. *C.* 5. §. 24. *&c.*

Pſal. 107.

be the alone free and generous Effects of his Bounty, and the gratuitous Communication of his Goodneſs to them; in order not to *his*, but to *their own* Happineſs and Felicity; which Circumſtance renders this Goodneſs and Beneficence the moſt highly Meritorious and Divine of all others whatſoever. I do not here take notice of the Objections againſt this Goodneſs and Beneficence of the Divine Nature, from the ſeeming Irregularities now appearing in the Moral and Rational Part of the Creation; becauſe Divine Revelation always owns ſuch ſeeming Irregularities at preſent, and refers the full So-
Rom. ii. 5. lution of them to the *Day of the Revelation of the righteous Judgment of God* hereafter; becauſe we are hitherto not ſufficiently acquainted with the laſt Reſult and Upſhot of Things to determine thoſe Matters; and becauſe the moſt ancient *Recognitions* of *Clement* have prevented me in good Part, and afforded more Authentick and valuable Hints, than any others which we at this Day can propoſe, towards their Solution. To which therefore I ſhall here, as I did before, refer the Inquiſitive Reader for better Satisfaction. Only ſo far the preſent Propoſition, as well as a foregoing One, may be of uſe to us in that Matter; as it aſſures us of the Goodneſs and Beneficence of God, in the wonderful Contrivance of the World about us, for the Eaſe and Comfort of the ſeveral Creatures which are therein: Which cannot but diſpoſe us to believe, that the ſame Attributes will at laſt appear equally glorious as to the *Moral*, as they do already as to the *Natural* World.

(15.) We learn farther from the true Syſtem of the World, that the Supreme God is invariably the

the ſame in all Ages; or that he is an *Immutable* Being. I do not mean that he is ſo rigidly *Immutable* as to be *Inexorable* to the Prayers of his Suppliants, who ask in a due manner what is fit for them; or that he has *immutably decreed* the *Fates* of Men, let them do whatever they will. Theſe Properties would not be thoſe of a Wiſe or Good Being, but of a Fooliſh and Evil one. Nor do the Phænomena, whence I draw this Attribute of Immutability, in the leaſt imply any ſuch Things. But I mean, that God appears to act by certain and conſtant Laws of Motion, of Gravity, of Refraction, *&c.* and this at all Times, and in all Places of the Univerſe, from the beginning of this Syſtem or World till this very Day; and from the utmoſt Limits of the ſame Syſtem one way, to thoſe that are oppoſite, ſo far as we are ever able to examine; without any Variation from the ſame, from one Generation to another. Thoſe only Caſes are to be excepted, wherein God is pleaſed to interpoſe in a more immediate manner; and by leaving or contradicting the ſettled Courſe of Nature and ordinary Providence, does more effectually demonſtrate his Divine Power and particular Providence in ſome extraordinary and miraculous Caſes, for the greater Benefit of any of his Creatures. Tho' by the way it will deſerve to be conſidered, whether even in thoſe Caſes, ſuch miraculous Operations may not be, uſually at leaſt, brought about, rather by the means of Angels, or of ſome other Spiritual and Invifible Beings, which Revelation and Hiſtory aſſures us are as his Miniſters in the World, without the direct Alteration of thoſe Fixed and Conſtant Laws of Nature, which we other-

wiſe find to be immutably obſerv'd by him.
2 Kings vi. 5, 6. Thus that *Iron*, which was made to *ſwim* in Water by the Prophet, contrary to the known Law of Specifick Gravity, might as well be ſupported by an inviſible Agent, notwithſtanding its ſuperior Gravity, as that ſuperior Gravity, by the direct Subſtraction of the Divine Influence be taken away from it; and ſo in many other Caſes; and this without the Impeachment of the Miracles themſelves, or their Intentions among Mankind. However, ſince we have already proved that the Supreme Being is a Powerful, a Wiſe, a Good, and a Free Agent, as well as we are now ſhewing him to be an Immutable One, it cannot be juſt ſo to interpret one of theſe Divine Perfections, as at all to claſh with, or contradict the other: and by Conſequence, we are not ſo to eſtabliſh *Immutability*, as in any Caſe to hinder the *free Exerciſe* of his Power, Wiſdom, and Goodneſs, where ſufficient Reaſons determine Him to act as he pleaſes in the Government of the World. For that would be a ſtrange Notion of a Powerful, Wiſe, Good, and Free Being, that He could exerciſe that Power, Wiſdom, and Goodneſs, in only one invariable manner, let the Occaſions for a different Exerciſe of the ſame be never ſo great or neceſſary. But, this Caſe excepted, Nature and Scripture agree, that *in God is no variableneſs, neither*
Jam. i. 17. *ſhadow of turning*.

(16.) We learn alſo from this true Syſtem of the World, that the Supreme God, the Maker and Governor of all Things, is not a blind Fate, or Series of neceſſary Cauſes and Effects, but is a *Spiritual*, a *Living*, and an *Active* Being; perpetually exerting his Divine Perfections in the whole

whole Univerſe. I do not here take the Word *Spiritual* meerly for Incorporeal or Immaterial; which Property I have already diſcourſed upon; but as importing alſo that Vigor, and thoſe Actions which brute Matter is uncapable of, and which are the proper Effects of Life, and on which Account the Sacred Writings ſo often call GOD the *Living God*, in oppoſition to thoſe Dead or Inanimate Heathen Idols, which were not able to do any Thing either for Mercy or Judgment. Now that the Supreme God, the Author of all Things, muſt be thus a *Spiritual*, *Living* and *Active* Being, continually Obſerving, and Knowing, and Ordering, and Providing, and Acting in the World, is not only highly probable becauſe he is the Creator of all; and therefore will not certainly forget, or overlook, or neglect the *Works of his own Hands*; but is directly proved from many of the foregoing Propoſitions, which have given us abundant Inſtances of ſuch his Life and Activity. And no wonder that the Supreme Spiritual Being is thus Living and Active, ſince, as Material Subſtance or Body is in its own Nature, according to all the Experience we ever have of it, Dead, Inert, and wholly Unactive; ſo does it ſeem that Spiritual Subſtance, or Soul, is in its own Nature in general, Living, Active, and Vigorous; and that the different Degrees of ſuch Life, Activity, and Vigor, do conſtitute or proceed from the ſeveral Kinds of Spiritual Beings, from the meaneſt ſenſitive Soul of a Brute, up to the Supreme Spirit of the Univerſe himſelf. I do not mean with *De Cartes*, that a Soul or Spiritual Being does for ever actually think, or is always by neceſſity of Nature, in Action; no

Pſal. cxxxviii. 8.

more than I believe that a Body is ever really, and by neceſſity of Nature in Motion; but that it is always Quick, and Active, and Ready, upon all Occaſions and Objects that preſent themſelves, to think, and conſider, and reſolve, and exert it ſelf; and that this Faculty is one of its main Diſtinctions from Body or Matter, which is entirely deſtitute of all ſuch Faculties whatſoever. And certainly, He that produc'd all the Living, and Active Powers and Abilities which are in the Creatures, muſt himſelf poſſeſs them in the higheſt and moſt exalted manner poſſible; which Life and Activity, if He, the Supreme Being, were wholly bereaved of, he would be ſo far from the Object of our Worſhip, Fear, Love, and Adoration, as all Men naturally look upon him to be, that he would be certainly the Subject only of Neglect and Contempt. Wherefore Philoſophy, as well as Religion, aſſure us of the Truth of what *Darius* an Heathen King was once obliged to acknowledge, that *Men ought to tremble and fear before God; for He is the Living God, and ſtedfaſt for ever; and his Kingdom that which ſhall not be deſtroyed. And He worketh Signs and Wonders in Heaven and in Earth.*

Dan. vi. 26, 27.

(17.) We farther learn from the true Syſtem of the Univerſe, That the Supreme God, the Maker and Governor of all Things, is but *One*. This *Unity* of God, or that there is but *One* Infinite, Eternal, Omnipotent Being or Agent, who created and governs all Things, is among the firſt Dictates of Nature and right Reaſon, when it reflects upon the obvious Phænomena of the World, and is moſt clearly confirm'd by all the foregoing Obſervations. The *Univerſe*

appears thereby to be evidently *One Univerſe*; govern'd by *One Law of Gravity* through the whole; and obſerving the *ſame Laws* of Motion every where. The *Conduct* of the whole is every where *One and the ſame*; and not the leaſt Signs or Traces do appear of any Oppoſite, or Coordinate Power interpoſing it ſelf in any of its regular Phænomena. So that this *Unity of God*, is now for ever eſtabliſhed by that more certain Knowledge we have of the Univerſe; as it was naturally alſo, tho' in a leſſer Degree, diſcoverable by all Mankind before. So true and juſt are the Words of the Apoſtles in their *Conſtitutions*, concerning the Occaſion of God's impoſing on the *Jews* the rigid Ceremonies of the Law of *Moſes*, after their Idolatry about the Golden Calf "I impoſe theſe Things on thee, --- that being preſs'd and gall'd by thy Collar, thou mayeſt "depart from the Error of Polytheiſm, and "laying aſide that *Theſe are thy Gods O Iſrael*, "mayeſt be mindful of that, *Hear O Iſrael, the* "*Lord our God is One Lord*; and mayeſt run "back again to that Law, which is inſerted "by me in the Nature of all Men, *That there* "*is only One God in Heaven, and on Earth.*

L. VI. c. 20. Exod. xxxii. 4. Deut. vi. 4.

(18.) Laſtly, we learn from this true Syſtem of the World, that we and all Creatures are entirely under the *Dominion*, and ſubject to the ſupreme *Authority* of this One God, as to *our Lord and Governor*. This is the moſt natural and obvious Conſequence, from what has been hitherto proved, concerning the Exiſtence, the Attributes, and the Providence of the One Supreme God; that this World, wherein we all live, is *God's World*; that this Syſtem of the

Univerſe, is God's great Houſe, or Family, or Kingdom; and that all Rational Beings are God's Creatures, the Members of that his Family, and Subjects of that his Kingdom; owing all poſſible Obedience, Duty, and Homage to him, as to their great Maſter and King. This abſolute *Supremacy* of the One God, and Obligation of all Derived and Created Beings to entire *Submiſſion* to him, is ſo plain from theſe Conſiderations, that as He muſt be the moſt *egregious Fool*, in point of Prudence, that will dare to oppoſe himſelf to the Omnipotence of his Almighty Lord and King; ſo is he the moſt *profligate Wretch* in point of Duty, that will venture to refuſe his Submiſſion to the Infinite Wiſdom and Goodneſs of his moſt beneficent Creator, Father, and Benefactor, *In whom he lives, moves, and has his Being; and whoſe Offspring he is.* Nor will Philoſophy it ſelf in the leaſt ſcruple the juſtneſs of that Exhortation made uſe of by the *Pſalmiſt* upon this Occaſion; *Becauſe the Lord is a great God, and a great King above all Gods; becauſe in his Hand are the deep Places of the Earth, and the Strength of the Hills is his alſo; becauſe the Sea is His, and He made it, and his Hands formed the Dry Land; O come therefore, let us Worſhip and Bow down, let us Kneel before the Lord our Maker: For he is our God, and we are the People of his Paſture, and the Sheep of his Hand.*

Acts xvii. 28.

Pſal. xcv. 3-7.

PART

PART VII.

Important Principles *of* Divine Revelation, *confirm'd from the foregoing* Principles, *and* Conjectures.

SINCE it has now pleaſed God, as we have ſeen, to diſcover many noble and important Truths to us, by the Light of Nature, and the Syſtem of the World; as alſo, he has long diſcovered many more noble and important Truths by Revelation, in the Sacred Books; It cannot be now improper, to compare theſe two *Divine Volumes*, as I may well call them, together; in ſuch Caſes, I mean, of Revelation, as relate to the Natural World, and wherein we may be aſſiſted the better to judge, by the Knowledge of the Syſtem of the Univerſe about us. For if thoſe Things contained in Scripture be true, and really deriv'd from the Author of Nature, we ſhall find them, in proper Caſes, confirm'd by the Syſtem of the World; and the Frame of Nature will, in ſome Degree, bear Witneſs to the Revelation. But if thoſe

Points contain'd in Scripture be falſe, and did not really come from God, we ſhall find the Frame of Nature, which is now much better underſtood than in the Days of thoſe Antient Writers, frequently to contradict them, and ſo to detect their Forgery, and prevent their further Impoſition upon Mankind. Nor indeed have we any way ſo ſure and ſatisfactory to examine the pretended very ancient Accounts of Things by, as this in general; I mean, the trying their Verity in ſuch Points, whether Natural or Hiſtorical, as we have ſure Methods of knowing, whether the Things aſſerted in them were, or might be really true or not. For as a plain Diſagreement of Nature, or certain Hiſtory, from Scripture, in ſuch Points, will afford a terrible Suſpicion, that the latter is either falſe, or at leaſt interpolated; ſo will as plain an Agreement be a mighty Evidence for the Truth, and Uncorruptneſs of thoſe Scriptures; and this even in general, as to ſuch other Contents of the ſame, as can no way come under the like Methods of Examination. If I am once fully ſatisfy'd, that a Witneſs is Upright and Honeſt, even in ſeveral Points where there was the greateſt Suſpicion as to his Sincerity, he will deſerve the better Credit in other Caſes, even where no corroborating Evidence can be alledg'd for his Juſtification. To this kind of Evidence then do I Appeal on behalf of thoſe Sacred Writings; and do plead for their Reception, as Genuine and Authentick Records, in the ſeveral particular Caſes following.

(1.) The Scriptures agree to declare the very ſame, *all the ſame Truths*, and aſcribe the very ſame, *all the ſame Attributes* to God, which we

we have ſhewed to be real, and to belong to him from the Conſideration of the Syſtem of the World.

(2.) Their Accounts of the *Creation* of the World out of a *Chaos*, when rightly underſtood, are not only agreeable to many Remains of Ancient Prophane Tradition, but to the Frame and Laws of Nature, and the true Syſtem of the Univerſe.

(3.) Their Chronology, or Accounts of the *Antiquity of the World* are right, and agreeable to the beſt Methods which Nature and Philoſophy afford us for the diſcovery of the ſame.

(4.) Their Accounts of the *Paradiſiacal State*, and its Mutation from that State, before the *Antediluvian One*, after the Fall of Man, are agreeable to Nature, and the true Frame of the World.

(5.) So are their Accounts of the *Univerſal Deluge* in the Days of *Noah*.

(6.) So are their Accounts of the *Inviſible World*, or of *Angels* and *Dæmons*, their Places and Miniſtrations.

(7.) So are their Accounts of the future *Conflagration* of the World.

(8.) So are their Accounts of the *Reſurrection of the Body*, and *Renovation* of Things.

(9.) So are their Accounts of the future *Conſummation of all Things*.

(10.) So are their Accounts of *Hades*, or of the Place of Departed Souls, in the intermediate State, before the Reſurrection.

(11.) So are their Accounts of *Heaven*, or of the Place and State of Happineſs for Good Men after the Reſurrection.

(12.) So are alſo their Accounts of *Hell*, or of the Place and State of Puniſhment for wicked Men, after the Reſurrection.

Theſe are the Heads I propoſe to Diſcourſe of. Only before I begin, I muſt, as I have already done under the Head of Conjectures, to which this Part will commonly bear a very near Relation, intreat the Reader to diſtinguiſh exactly between the foregoing *Propoſitions*, with their *Inferences*, as to Natural Religion, Chapters IV. and VI. which I propoſe as *certain*; and the foregoing *Conjectures*, with their *Inferences*, as to Reveal'd Religion, Chapters V. and VII. which I propoſe as *Probable* only. I do not mean, that the Doctrines themſelves, contain'd in Scripture, are only Probable; for I believe they have the Certainty of Divine Revelation it ſelf: But that the Accounts, or Natural Solutions of thoſe Points here offered, which are commonly the Reſult of my own peculiar Thoughts and Notions, upon the Compariſon of Scripture and Philoſophy together, are not yet to be look'd on as more than private or *probable Conjectures*, humbly propoſed to the Conſideration of the Publick. I ſpeak this in the general, and with regard to the greateſt number of them: For as for ſome few of them, eſpecially that relating to the Deluge of *Noah*, I cannot but look on them as ſo exceeding probable, that I can ſcarcely avoid placing them under the foregoing Affirmations, or Aſſertions. But to come to Particulars,

(1.) I obſerve that the Sacred Accounts declare the very ſame, *all the ſame Truths*, aſcribe the very ſame, *all the ſame Attributes* to God, which we have ſhewed to be real, and to be

long

long to God, from the Conſideration of the true Syſtem of the World. This I have taken care to prove or illuſtrate all the way as I went over thoſe particular Truths and Attributes; and took notice that both Nature and Scripture all along correſpond to the ſeveral Concluſions: That they jointly agree that the Souls of Brute Creatures are diſtinct from their groſs Bodies, and are ſenſitive, and moſt probably *incorporeal*; That the Rational Souls of Men are more certainly and entirely *Immaterial*; that they are alſo *Immortal*, or will naturally exiſt after the groſs Bodies are diſſolved; that there is a God or *Supreme Being*; that this World has not been *Eternal*, but was *Created* by that Supreme Being; that this Supreme Being, the Creator of all Things, is an *Eternal* Being; that He Exerciſes a continual *Providence* over the Creatures he has made; that he is not a *Neceſſary*, but a *Free Agent*; that He is *Intelligent* and *Omniſcient*; that He is an *All-wiſe*, and that He is an *All-powerful* Being; that He is *Omnipreſent*, *Immaterial*, and *Immutable*; that He is *Good* or *Beneficent*; that He is a *Spiritual*, and *Living*, and *Active* Being; that He is but *One*; and that He is therefore the alone Supreme *Lord* and *Governor* of the whole Univerſe. Now this cannot but be a great Confirmation of the Sacred Records, that ſuch Deductions from Aſtronomy and Natural Philoſophy, as their Authors could either not at all, or very imperfectly make when they lived, do yet, upon that vaſt Improvement of Natural Knowledge, which has been of late made, all appear right and agreeable to the true Syſtem of Things. And this is more particularly to be obſerved, as to ſuch of the be-

fore-

fore-mentioned Divine Attributes, as the Heathens differ'd from the *Jews* and Chriſtians in; wherein the Syſtem of the Univerſe does, as we have ſeen, every where bear Witneſs againſt the Heathen, and for the *Jewiſh* and Chriſtian Notions in thoſe important Matters. I inſtance diſtinctly in that grand Doctrine of the *Unity* of God, wherein theſe Sacred Records did all along differ from the current Notions, and conſequent Practices of the reſt of the World, in all thoſe Ages whereto they belong; and indeed inſiſted on it to that degree, as to lay their entire Foundations on that *Unity of God*, in the directeſt oppoſition to the *Polytheiſm* of the reſt of the World; and this without the Pretence of greater Natural Knowledge than was in other Nations, to derive that Notion from; and yet with ſuch Boldneſs and Aſſurance, as to Ordain the hazard of Life it ſelf, and of all the Comforts thereof upon its Truth, and the Hopes derived from it. This Agreement of the Syſtem of the World to the *Unity of God*, now ſo certainly diſcovered by the Syſtem of the *Univerſe*, in exact Concord with the *Jewiſh* and Chriſtian Records; and in direct Contradiction to the Opinions of the generality of the Heathen World, even in the Politeſt and moſt Learned Ages of it, is like a *Solemn Determination* upon an *Open Appeal* made on the ſides of the *Jews* and Chriſtians, againſt all the reſt of the World, in this moſt Important and Fundamental Point of true Religion. Which Determination ought therefore to be own'd as the higheſt Atteſtation to that true Religion, and thoſe Original Records wherein it is contain'd, that could eaſily be deſir'd or expected.

expected: And which accordingly ought to be allowed to be of the greateſt Weight and Moment poſſible in the preſent Caſe. I obſerve,

(2.) That the Sacred Accounts of the *Creation* of the World out of a *Chaos*, when rightly underſtood, is exactly agreeable to the Frame of Nature, and the true Syſtem of the Univerſe. That Account of the *Moſaick* Creation which I mean, is this, That, taking the only Example which is in Nature of a real *Chaos*, I mean the *Atmoſphere of a Comet*, for the *Moſaick Chaos*; and taking that Chaos or *Atmoſphere*, not to be revolv'd about its own *Axis*, till after its Formation into a Planet, which Nature fully agrees to, and which would imply a *Day*, and a *Year*, to be all one, that "This *Moſaick* Creation, I ſay, is not a Nice and Philoſophical "Account of the Origin of all Things; but an "Hiſtorical and True Repreſentation of the "Formation of our ſingle Earth out of that "confuſed Chaos, and of the ſucceſſive and "viſible Changes thereof each Day, or Year, "till it became fit for the Habitation of Mankind. Now as to this Matter, I have entirely prevented my ſelf in my Preface to the *New Theory of the Earth*; wherein I have at large Diſcourſed thereof; and I hope, in good Meaſure, to the Satisfaction of the Learned and Inquiſitive; whither therefore I muſt in this Place refer my Readers. Only I ſhall deſire them to reflect here upon a few Things in Natural Knowledge thereto relating, which are peculiarly ſuitable to my preſent Purpoſe; as highly confirming the Truth of the Sacred, or *Moſaick* Hiſtory of the Creation. The Things I mean

I mean are theſe Four; Firſt, Nature does now exhibit to us ſuch a *Chaos* as that Hiſtory ſuppoſes, for the Fund and Promptuary of our Earth; which till lately the World could not know, but by Revelation: Secondly, Nature does now ſhew the Poſſibility of the greater Length of the Periods, or Days of Creation, than thoſe of our ordinary Days, without which no Natural and Rational Account could be given of that Creation; and this conſiſtently with the Letter of *Moſes*, that thoſe Periods were ſtill, ſtrictly ſpeaking, *Days* at the ſame Time: Thirdly, Nature does now ſo clearly ſhew the Impoſſibility of the *Eternity* of this Syſtem, and much more of this particular Earth, in its preſent State, as prepares the way for the Belief of that Sacred Account of its Original Creation: And Fourthly, Nature does ſo plainly ſhew the neceſſary Intereſt the Supreme Being has in all the ordinary Appearances of Nature, and in the Preſervation of the ſeveral Worlds now in being, as much more implies his Intereſt in the firſt Original, and Primary Settlements of the ſame; and ſuch as prepares us moſt eaſily to believe what *Moſes* aſſerts of the Interpoſition of *Divine Power*, and *Wiſdom*, and *Goodneſs*, in that whole Affair. Theſe Obſervations deſerve a peculiar Regard; and Aſtronomy does now, in theſe Reſpects, fully ſupport and atteſt to the Sacred Accounts, thus reaſonably underſtood, againſt all the oppoſite Notions of thoſe ignorant or prejudic'd Philoſophers, who pretended to give different Accounts of ſuch Matters; and eſpecially againſt thoſe Two Famous Antiſcriptural Hypotheſes of the *Eternity* of Things; and of their Original from meer *Chance* and *Accident*,

Accident; both which, as we have already ſhewn, are entirely confuted, and rendred not only incredible, but ridiculous, from the preſent Knowledge we have of the true Syſtem of the Univerſe. I obſerve,

(3.) That the Sacred *Chronology*, or Scripture Account of the Antiquity of the World, and its Duration ſince the Deluge, is right, and agreeable, not only to the moſt certain Remains of Ancient Prophane Hiſtory, but to the beſt Methods which Nature and Philoſophy afford us for the Diſcovery of the ſame. I mean not only, that it appears from the true Syſtem of the World, that neither the Whole, nor any Parts of the ſame, can have been ſtrictly *ab æterno*, in their preſent Condition, of which before; but that the Antiquity of our preſent Earth, and its Inhabitants, whether taken from Ancient Prophane Tradition, and Hiſtory, or from the Phænomena of Nature, does beſt agree to the Sacred Accounts, which make it nearly 6000, or 7000 Years Old, and not more. Now as to this Matter, I muſt own that a Perſon of very great Sagacity, has lately advanc'd a contrary Notion, from the Degree of Saltneſs of our preſent Ocean, compar'd with the Length of Time which he ſuppoſes neceſſary, according to his own Hypotheſis, to bring it to that Degree. Whence he ſeems to think it to be much longer, not only than the Scripture Account of the Time ſince the Deluge; beyond which, I ſhould think it in vain to extend any ſuch Calculations; but much longer than the Time ſince the *Moſaick* Creation it ſelf, as delivered in the ſame Scripture; unleſs we extend the Duration of the Days of Creation to an immenſe Length, without

Philoſ. Tranſact. N°. 345.

out any Authority for ſo doing. But then, this Perſon allows all this to be built on an Hypotheſis, an uncertain Hypotheſis, of the Origin of the Saltneſs of the Ocean; and he allows that ſuch Trials have not been made, nor indeed are now poſſible to be made, as are neceſſary even on this Hypotheſis, to determine that Duration, in this or ſeveral future Ages. So that at the bottom the whole is, by his own Conceſſions, very uncertain, and only built on ſome *Suſpicions*, which it cannot be now known whether they have any Foundation in Nature or not. In which Caſe, by the way, it had been but reaſonable to avoid the giving any Intimations to weaken the Sacred Chronology, unleſs there had been ſome real or ſure Evidence againſt it; which yet is not here pretended to. However, leaving this Notion, as not yet worthy of a direct Confutation, I venture to aſſert, that the beſt ways of Determination we now have of the Age of the World, whether from Prophane Hiſtory, or the Phænomena of Nature, do very well agree to the Sacred Chronology, and confirm us in the Belief that the Earth has not been in its preſent State above 6000 or 7000 Years; and that ſince the general Flood, there have ſcarce yet paſſed 5000 Years; according to the Sacred Chronology thereto relating. Now the beſt ways of knowing this Duration of the World, abſtractedly from Scripture, ſeem to be theſe Five following. (1.) By Ancient Prophane Hiſtories, directly relating to ſuch Matters. (2.) By the Hiſtories of the Beginning and Progreſs of Arts and Sciences. (3.) By the Accounts of the Origin and ſpreading of the ſeveral Colonies of Nations

Nations all over the World. (4.) By the preſent Number of Mankind upon the Face of the Earth, compar'd with the beſt Computations we have of the Time neceſſary for ſuch their Increaſe and Doubling. (5.) By the preſent State of the Celeſtial Motions, and Terreſtrial Appearances, and the Length of Time neceſſary for any ſuch Irregularities ariſing therein, as would be ſenſible to us. As to the former Four Methods, which juſtly pretend to the greateſt Nicety, they are not proper for this Place; and they have been ſo fully examin'd already by others, or by my ſelf elſewhere, and found ſo well to agree to the forementioned Intervals, that I believe judicious Men muſt pronounce upon the whole, they are conſiderable Atteſtations to this Sacred Chronology. But as to the laſt Method, the Conſideration of the Celeſtial Motions, and Terreſtrial Appearances, I do not know that they can determine to any Degree of Exactneſs, how long they have continued in their preſent State. Only thus far, that none of thoſe Motions or Phænomena do contradict the Sacred Accounts, and that they all ſhew that the World cannot have been very much older than thoſe Accounts affirm. Thus the Moon's Menſtrual Motion muſt be gradually ſtopped by the Æther, or fine Medium in which it revolves about the Earth: But then this is hitherto ſo perfectly Inſenſible, that Dr. *Halley* ſeems to have been the firſt that diſcovered any Occaſion in Aſtronomy, for making the leaſt Allowance for any Inequality in that Motion. Thus the Earth's and Moon's Annual Motion muſt be gradually retarded by the ſame Reſiſtance; yet ſo ſmall has this hitherto been, that

Bochart Phaleg. *L. C. f.* Hale's *Origination of Mankind. See* Chronol. Old Teſt. *p.* 60, —68.

Sir Iſaac Newton's *Princip. 2d Edit. p.* 481.

that the Aſtronomers have not yet obſerved it. Thus the Conſequence of the Retardation of the Earth's Diurnal Motion; which muſt alſo in length of Time ariſe from the ſame Reſiſtance, would be the receding of the Sea from the Dry Land in the Torrid, and its overflowing it in the Frigid Zones: [unleſs the Earth be fluid within, and ſo accommodates it ſelf to ſuch Alterations] which is not yet in the leaſt obſervable. Thus the Fluids of our Earth are found gradually to diminiſh; yet is this ſo very inconſiderable hitherto, as no way to be diſtinctly found by any Inconveniences ariſing from it. Thus the Mountains do, for certain, waſh away, and are diminiſh'd; and the Valleys receive what the others loſe, and are augmented: Yet do not we hitherto obſerve any notable Inequalities ariſing therefrom. In ſhort, all ſuch defects, decays, or irregularities, which muſt in length of Time, according to the ſettled Laws of Nature, ariſe in our preſent Conſtitution, appear to have been hitherto ſo very ſmall and inconſiderable, ſince the beginning of this Settlement, that we have thereby certain Evidence that its Age cannot be very much greater; and no Evidence that it is at all greater than what is contain'd in the Sacred Chronology. Which Thing, how conſiderable a Confirmation it is of that Chronology, I leave to the Impartial to determine. I obſerve,

(4.) That the Sacred Accounts of the Mutation from the *Paradiſiacal State* before, to the *Antediluvian one*, after the Fall of Man, is agreeable to the State of Nature, and the true Frame of the World. That God, when he firſt made Man upon this Earth, placed him in Paradiſe;

Paradiſe; that He there gave him a Law for the Tryal of his Obedience; that Man did tranſgreſs that Law; that this Tranſgreſſion was occaſion'd by the Temptation of the Old Serpent the Devil and Satan; and by the firſt Compliance of the Wife, and by her Perſuaſion of her Husband; that they were thereupon caſt out of Paradiſe, and the happy State of Nature was much altered for the worſe; that the Serpent was accurſed, and ſubjected at laſt to the Power of the Seed of the Woman; that the Ground was alſo curſed, and made to bring forth Thorns and Bryars, and not to bring forth its Fruit without the extraordinary Toil and Sweat of Mankind; that the Female ſhould be in greater Subjection to the Male than otherwiſe ſhe ſhould have been, and than many other Females now are; that ſhe ſhould have greater Sorrow in the Conception and Bearing of her Offspring than otherwiſe ſhe ſhould have had, and than any other Females now have; and that ever afterwards the Race of Men ſhould have alſo ſuch a Senſe of Shame, or *pudor circa res venereas*, as they had not before, and as is not in other Animals; and withal more conſtant Inclinations that way than thoſe Animals have; all which has come to paſs accordingly, as ſtanding Memorials of the Truth of this Ancient Hiſtory of the Original State and Circumſtances of Mankind. Accordingly, for this we have not only theſe natural Tokens, but the certain Affirmation of the *Moſaick* Hiſtory, as all along ſuppoſed and confirmed in the Heathen Traditions, and in the *Jewiſh* and Chriſtian Revelations, as has been ſhewn by others. But then, what the *Alteration* in the State of the Earth and of Nature could

Gen. i, ii, iii. *See the Commentators there.*

could be, the Philoſophy and Aſtronomy of former Ages was utterly at a Loſs to determine, till upon the Conſideration of that Matter, and the Compariſon of Scripture and Nature, now better underſtood, together, I diſcovered that the commencing of the Earth's Diurnal Rotation, not at the beginning of the *Moſaick* Creation, but after the Earth's compleat Formation, and after the Fall of Man, would give the Beſt, the moſt Rational, and Philoſophical Account of this Alteration of all other; and I diſcovered, that this later Time of its Commencement, would beſt agree, not only with the Sacred Accounts, but with the Ancient Profane Traditions, and with the preſent Phænomena of Nature alſo. All which I have long ago diſcourſed of in my *New Theory of the Earth*; to which I muſt therefore refer my Reader for ſatisfaction. Only I ſhall deſire him in particular to take notice of what is there eſpecially inſiſted on under this Head, and which is peculiarly proper to my preſent Purpoſe, and that is, Dr. *Halley*'s Inferences from the Variation of the Needle's Declination from the *North*, and of Mine from the *Moſaick* Hiſtory of the Creation and Fall of Man, relating to the Time and Circumſtances of this Commencement of the Earth's Diurnal Revolution; and thence to obſerve how exactly they both agree together. Nor ſhall I enlarge farther here upon that whole Matter, but leave it entirely to the Determination of the Judicious. I obſerve;

Hypoth. iii. *p.* 85, 118.

2d *Edit. p.* 109, 110.

(5.) That the Sacred Accounts of the *Univerſal Deluge*, in the Days of *Noah*, is exactly agreeable to the State of Nature, and to the true Frame of the Univerſe alſo. Indeed the Solution of

of this moſt remarkable Phænomenon of an *Univerſal Deluge*, with its moſt numerous and eminent Circumſtances, as deſcribed in the *Moſaick* Hiſtory, which till this Age could no way be ſolved in a Natural way, nay ſeem'd utterly uncapable of any Philoſophical Solution at all; is now, I think, become ſo plain, evident, and certain, from the Phænomena of Comets, with their Atmoſpheres and Tails, now fully diſcovered; eſpecially from the particular Circumſtances, and Periods of the laſt moſt famous Comet of 1680, which appears to have been the Phyſical Cauſe of the ſame Deluge: I ſay, the Solution of theſe wonderful Phænomena's, as given in the Second Edition of my *New Theory of the Earth*, with its additional Sheet, is become now ſo plain, evident, and certain, that I own I cannot but be my ſelf very much ſurprized and ſatisfy'd with it, and equally ſurprized and ſatisfy'd with that ſtrong Confirmation it affords to the Sacred Records, in one of the leaſt probable, or moſt exceptionable Branches thereof. This is too large a Subject to be duly treated of in this Place. But I beg of the Inquiſitive Reader, that he will carefully weigh the very probable Solution I long ſince gave of that Deluge of *Noah*, from the Approach of a Comet, before I ſo much as hoped for the Knowledge of that very Comet which did ſo approach to it, and did cauſe the ſame; and that he will conſider the ſtrong additional Evidence ſince ariſen from the knowledge of that very Comet which did certainly approach to us on or about that very Year, and on or about that very Day of the Year, when the Sacred and Profane Accounts agree that Deluge began. If this be not ſatis-

See that Sheet here at the End.

factory Evidence in ſuch a Caſe, I do not well know what Evidence will be ſo eſteem'd. For my ſelf, I muſt profeſs, that while I look on the Solution of the other Phenomena under this Chapter as remarkable enough, and commonly not a little probable alſo; I cannot but look on the Solution of the Deluge by that very Comet, which I my ſelf ſaw *A. D.* 1680, 1681, to be in a manner certain; and by Conſequence I cannot but eſteem the Evidence thence ariſing, for the Truth of the Sacred Hiſtory in this important Caſe exceeding ſtrong and ſatisfactory. Nor do I think, that ſo unexpected and eminent an Atteſtation, as that of the Circumſtances and Period of this Comet, for ſolving the Deluge, lately diſcovered, moſt certainly is, has ever happend to any ſo ſtrange an Hypotheſis before, ſince the World began; which Thing cannot but be highly pleaſing to my ſelf; and I think is highly worthy of the Obſervation of others alſo. I obſerve,

(6.) That the Sacred Accounts of the *Inviſible World*, or of good Angels, and wicked Dæmons, their Places and Miniſtrations, is exactly agreeable to the true Syſtem and Phænomena of Nature. Now that the Sacred and Prophane Accounts, and the Hiſtories of all Nations and Ages, do ſuppoſe and inform us, that beſides the Supreme Inviſible Deity, beſides the Viſible Material World of Bodies, and beſides the Inviſible and Incorporeal World of Souls or Spirits, inhabiting in Viſible and Groſs Bodies, there are alſo another Species of Beings belonging to our Syſtem: I mean, thoſe Souls, or Spiritual Beings, who are either wholly free from Bodies,

or

or rather free from ſuch Groſs and Viſible Bodies as we have, but inhabit ordinarily in purer and more etherial Regions, in more ſubtle and aerial Bodies or Vehicles; who are Inviſible generally, and Intangible to our groſs Senſes, but not wholly Incorporeal, or unconcerned with us and our Affairs here below; that, I ſay, the Ancient, Sacred and Prophane Accounts, and Hiſtories, do aſſure us of the Exiſtence of theſe Species of Beings, every body that has ever read either Ancient or Modern Books, cannot deny or doubt. But that preſent Nature does at all favour theſe Accounts, and that we can give the leaſt Evidence from the Phænomena of the World, of their Being, or Place of Abode, or Influence here below, is what is not generally pretended to by even the Chriſtian Philoſophers. Now in this Caſe I ſhall venture a Step farther, and ſhall here ſet down ſuch Obſervations from Nature and Aſtronomy, as ſeem to me to favour this Account of the Inviſible World. Accordingly I obſerve, (1.) That Nature does as fully allow of the Exiſtence of Spiritual and Inviſible Beings *out* of groſs Bodies, as *in* them. Nor can thoſe who are convinc'd by the Phænomena of Animals, both Irrational and Rational, that they are compounded of Immaterial and Inviſible Souls, as well as of Material and Viſible Bodies, as we have already diſcours'd, at all ſcruple the Exiſtence of ſuch Spiritual and Inviſible Souls, either by themſelves, or united to much finer Bodies than thoſe of our groſs Animals here below. I obſerve, (2.) That Nature does favour the Exiſtence of ſuch Creatures, by ſhewing us ſuch large and noble Regions of the

World, as beſt of all ſuit the Habitation of ſuch Beings; and which, if there be not ſuch Beings, ſeem, contrary to the uſual Caſe of the other Parts of the Syſtem, to be wholly deſtitute of Inhabitants: I mean all the wide Spaces of the Atmoſpheres of the Planets, eſpecially thoſe ſtill, calm, clear, and æthereal Regions of the ſame which are above the Clouds, and Storms, and Diſorders of their loweſt Parts. Nature, as we ſtill find, abounds in all proper Places, with Living Creatures, not only on the Earth, or dry Land, but within the Earth, and Waters, and loweſt Air, every where; all made to enjoy their Creator's Bounty, and to be ſerviceable to other Beings Superior to themſelves. What Reaſon can there then be to ſuppoſe that this Air, the nobleſt Fluid in the Univerſe, even in its pureſt and moſt Celeſtial Parts, ſhould be deſtitute of Living Inhabitants? which yet it muſt be, in caſe we exclude thoſe *Inviſible Powers* above-mentioned. Now, in order to ſhew how little Prejudice to the Exiſtence of ſuch Beings, that Circumſtance of their being *Inviſible*, ought here to be; I obſerve, (3.) That whatever proper Inhabitants the Air has, their very Bodies ought to be *Inviſible*, becauſe the Air it ſelf, whereof we may ſuppoſe them made, is ever ſo. This is the wonderful Property of Air, ſtrictly ſpeaking, and that Property, which among all Corporeal Beings, otherwiſe ſenſible, ſeems peculiar to it, that it is ever, upon the utmoſt Condenſation poſſible, abſolutely to us *Inviſible*. Whence 'tis no wonder, that all ſuch Beings as live in it, and perhaps take their Bodies from it, how real or powerful ſo ever, are

like-

likewiſe ordinarily *Inviſible* to us. I obſerve, (4.) That the known Phænomena of our Air, ſeem in a peculiar Manner, to require and ſuppoſe the Exiſtence and Agency of ſuch Inviſible Beings therein, as we are here ſpeaking of; and cannot be fairly and mechanically ſolv'd without them. This I have particularly taken Notice of, in my Account of the unuſual Meteors lately ſeen in our Air, to which I refer the Reader. Nor do I find that any other Philoſophers are able to give us a better Account of thoſe Aerial Phænomena, without that Hypotheſis. So I cannot but conclude, that the Appearances of Nature do in this, as well as in other Caſes, atteſt to what Diſcoveries Divine Revelation has made relating thereto: And that there are Good and Bad Spirits in the Air, in our Neighbourhood, ready to perform what the Sacred Writings aſcribe to them. As to the other Place allotted for certain to ſome, now to us, Inviſible Beings, in Scripture, I mean *in the Heart of the Earth*; I have already made it probable from Natural Philoſophy, that the Heavenly Bodies have ſuch mighty Cavities within, as are the proper Receptacles for ſome ſuch Beings; and ſhall not need here to enlarge on that Subject; eſpecially ſince it will come again to be conſidered under the Tenth Particular hereafter. I obſerve,

See Dr. Halley's *Account of this* Phænomenon, Tranſact. Philoſoph. *N°.* 347.

(7.) That the Sacred Accounts of the Future *Conflagration* of the World, is exactly agreeable to the true Syſtem of the Univerſe. Now this Conflagration of the upper Earth, and all that is upon it, according to the Diſcoveries made by Divine Revelation, is ſo natural, or rather

2 Theſſ. i. 8. 2 Pet. iii. 7, 10.

neceſſary a Conſequence of the Approach of a Comet to a Planet, when it has juſt been broiled in the Sun's Rays, which Aſtronomy now knows to be not only poſſible, but, in the courſe of Time, ſometimes certain; and I have ſo fully prevented my ſelf upon this Head in my *New Theory of the Earth*, that I ſhall not need to enlarge upon it here: I only beg of the Inquiſitive Reader to obſerve, That the Two grand Cataſtrophes which the Scriptures certainly make our Earth alone ſubject to, I mean a *Deluge*, and a *Conflagration*, are thoſe Two Cataſtrophes, and thoſe Two only which the true Syſtem of the World ſhews ſuch Planets to be naturally liable to: Which Obſervation, how great a Confirmation it is of the Truth and Divine Original of thoſe Scriptures, I leave to every Reader's own ſerious Conſideration. I obſerve,

2d Edit. p. 448, 449.

(8.) That the Sacred Accounts of the *Renovation of Things*, and of the *Reſurrection of the Body*, are very agreeable to ſome known Phænomena of Nature. That the παλιγγενεσία, or *Renovation*, not utter *Deſtruction* of the World, may be the Natural and Regular Conſequence of that *Conflagration* we have been lately ſpeaking of, I have particularly ſhew'd towards the End of my *New Theory*; and ſhall not need to repeat it in this Place. But that the very *Reſurrection of the Body* ſhould have any thing properly to Countenance it, or reſemble it in Nature, will not be eaſily believ'd. Yet do I look upon thoſe Changes which are made in the Bodies of not a few Inſects, as particularly in the Silkworm; while ſtill upon the moſt ſurprizing Mutations in the Body, the ſame Life or Soul is the Inhabitant within; as no ill Reſemblances

Ubi ſuprà.

See Mr. Derham's Phyſico-Theology.

ſemblances of, or preludes to, the nobler Wonder of the Reſurrection of Human Bodies. I mean this, as we thence learn, how very different Forms and States the ſame Creature can naturally put on, without being really another Creature: Juſt as the Chriſtian Religion informs us the Souls of Men muſt undergo in the ſeveral Conditions or Periods (1.) Of this groſs Earthly Body now. (2.) Of the Aereal Vehicle in the intermediate State. And (3.) Of the Spiritual Body after the Reſurrection. Nor ſhould we our ſelves have been able to believe ſuch Mutations in the ſame Inſects to be true, unleſs continual Experience did aſſure us thereof: as neither does the Chriſtian Religion expect the Belief of the other, but upon the Atteſtation of Him who made all thoſe mutable Creatures, with Man alſo, who is to undergo thoſe other more important Mutations. *See Conſtit. Apoſt.* V. 7.

(9.) I obſerve, that the Sacred Account of the future *Conſummation of all Things*, is agreeable to the true Syſtem of the Univerſe. What I here mean is that particular and final Cataſtrophe of our Earth, ſpoken of by St. *John* in his *Revelation*, where he informs us, that *He ſaw a great white Throne, and Him that ſat on it; from whoſe Face the Earth and the Heavens fled away, and there was found no place for them*: Or when a final Period is to be put to the preſent Place and Uſe of this Earth, with its Atmoſphere. Now that this Cataſtrophe may naturally and regularly befal our Earth, or any of the Planets, according to the true Syſtem of the World, and without a Miracle, I have already obſerv'd in the laſt Propoſition of my *New Theory*. Nor can any one that knows how a Apoc. xx. 11.

Comet

Comet may regularly ſtrike againſt a Planet in its Courſe, and thereby remove it from its preſent Station, into an Orbit of a quite different Situation, Nature, and Uſe, from what it now has, make any difficulty at all in believing this, *viz.* that there will be at laſt, a *Conſummation of all Things* belonging to this Sublunary World, according as the Inſpired Writer has delivered it to us. I obſerve,

(10.) That the Sacred Accounts of ᾍδης, or of the *Place of departed Souls*, in the intermediate State before the Reſurrection, is very agreeable to the true Frame of the Univerſe. That ᾍδης, or the Place of departed Souls, till the Reſurrection, is either in the Air, or in the Heart of the Earth, ſeems to me the Importance of all the Ancient and Sacred Records we have of that Matter; *i. e.* they ſeem to me to imply, that ſome of them are at liberty in the Air, and others impriſon'd in the Earth; which two Places we have ſhewn to be, Philoſophically ſpeaking, the only fit Places for their Habitation alſo. So that hitherto Nature and Scripture ſeem to me entirely to agree, and to bear Witneſs mutually to each other in theſe Matters.

See the Appendix to My Boyle's *Lect. or my Serm. and Eſſays. P.* 170–178.

(11.) I obſerve, that the Sacred Accounts of *Heaven*, or of the Place and State of Happineſs for Good Men before the Conſummation of all Things, is not only agreeable to the Remains of Ancient Profane Tradition, but to the true Syſtem of the World alſo. This happy State is deſcrib'd in Scripture to be a *State of Light*, a *Reward in Heaven*, and introduc'd by Good Men's *meeting the Lord in the Air*; and ſo *being ever with the Lord*. Which if it be after the Conflagration, as ſeems not improbable, will

Pſ. xxxvi. 9. Coloſs. i. 12. Luc. vi. 23. 1 Theſſ. iv. 17.

will belong to a more pure and purged State of our Air or Heaven than what we now enjoy; which will well agree to ſuch *Glorious* and *Spiritual*, and *Uncorrupt* Bodies as Good Men are to have at that Time. Wherefore, as we have already ſeen, that the Air in its preſent State, both according to Nature and Scripture, is one proper Place for Inviſible Beings, thoſe I mean that inhabit Aerial Bodies, ſo may it by the *purifying Fire* of the Conflagration be ſo meliorated as to be a proper Place for the Habitation of the Pious, with their Spiritual Bodies alſo, till the Conſummation of all Things. For as to the State and Place of Happineſs after that Conſummation, I do not know that the Sacred Writings afford us any particular Light about it; and ſo I ſhall not preſume to indulge my ſelf in any groundleſs Conjectures thereto relating; as content with this exact Agreement of Nature and Scripture till this grand Period of our World, which ſeems to me to be the Grand Period of thoſe Sacred Books alſo. 1 Cor. xv. 42, 43.

(12.) I obſerve, that the Sacred Accounts of *Hell*, or of the Place and State of Puniſhment for wicked Men after the general Reſurrection, is agreeable not only to the Remains of ancient profane Tradition, but to the true Syſtem of the World alſo. This ſad State is in Scripture deſcrib'd as a State of *Darkneſs*, of *outward Darkneſs*, of *blackneſs of Darkneſs*, of *Torment* and *Puniſhment for Ages, or for Ages of Ages, by Flame*, or *by Fire*, or *by Fire and Brimſtone, with Weeping and Gnaſhing of Teeth*; where *the Smoak of the* Ungodly's *Torment aſcends up for ever and ever*; where they are Tormented *in the Preſence of the Holy Angels*, Matt. viii, 12. Jude 5. 13. Matt. xxv, Luc. xvi. 24. Matt. viii. 12. Apoc. xiv. 10, 11.

and

Mat. xiii. 49, 50. *and in the Preſence of the Lamb ; when the Holy Angels ſhall have ſeparated the Wicked from among the Juſt, and have caſt them into a Furnace of Fire.* Now this Deſcription does in every Circumſtance, ſo exactly agree with the Nature of a Comet, aſcending from the Hot Regions near the Sun, and going into the Cold Regions beyond *Saturn*, with its long ſmoaking Tail ariſing up from it, through its ſeveral Ages or Periods of revolving, and this in the Sight of all the Inhabitants of our Air, and of the reſt of the Syſtem ; that I cannot but think the Surface or Atmoſphere of ſuch a Comet to be that *Place of Torment* ſo terribly deſcribed in Scripture, into which the Devil and his Angels, with wicked Men their Companions, when delivered out of their *Priſon* in the Heart of the Earth, ſhall be caſt for their utter *Perdition* or *ſecond Death* ; which will be indeed a terrible but a moſt uſeful Spectacle to the reſt of God's rational Creatures ; and will admoniſh them above all Things to preſerve their Innocence and Obedience ; and to *fear him who is* thus *able to deſtroy both Soul and Body in Hell.*

2 Pet. ii. 4. Jud. v. 6. Apoc. xx. 14.

Mat. x. 28. Luc. xii. 5.

PART VIII.

Such Inferences ſhewn to be the common Voice of Nature and Reaſon, *from the* Teſtimonies *of the moſt conſiderable Perſons in all Ages.*

N. B. THE Teſtimonies under this Head will be of themſelves ſo plain, that I ſhall need to make no Comment nor Reflections upon them; but then they will be withal ſo numerous, that I muſt beg the ſober Reader's Patience and Attention in the diſtinct Peruſal and Conſideration of them: Which certainly are but a due Debt to the Importance of the Subject, and to the Character of the Witneſſes. I begin with the Book of *Job*; which I eſteem the Ancienteſt Record now extant in the World.

Job] God is wiſe in Heart, and mighty in ſtrength: Who hath hardened himſelf againſt him, and hath proſpered? Which removeth the Mountains, and they know not: which overturneth them in his Anger. Which ſhaketh the Earth ix. 4- 10.

out

out of her Place, and the Pillars thereof tremble. Which commandeth the Sun, and it riſeth not: and ſealeth up the Stars. Which alone ſpreadeth out the Heavens, and treadeth upon the Waves of the Sea. Which maketh *Arcturus*, *Orion*, and *Pleiades*, and the *Chambers of the South*. Which doeth great Things paſt finding out, yea, and Wonders without Number.

x. 8--12. Thine Hands have made me and faſhioned me together round about; yet thou doſt deſtroy me. Remember, I beſeech thee, that thou haſt made me as the Clay, and wilt thou bring me into Duſt again? Haſt Thou not poured me out as Milk, and cruddled me like Cheeſe? Thou haſt clothed me with Skin and Fleſh, and haſt fenced me with Bones and Sinews. Thou haſt granted me Life and Favour, and thy Viſitation hath preſerved my Spirit.

xii. 7--10. But ask now the Beaſts, and they ſhall teach thee; and the Fowls of the Air and they ſhall tell thee: Or ſpeak to the Earth, and it ſhall teach thee; and the Fiſhes of the Sea ſhall declare unto thee. Who knoweth not in all theſe, that the Hand of the Lord hath wrought this? In whoſe Hand is the Soul of every living Thing, and the Breath of all Mankind.

xxii. 12. Is not God in the Heighth of Heaven? And behold the Heighth of the Stars how high they are.

xxvi. 7--14. He ſtretcheth out the *North* over the empty Place, and hangeth the Earth upon nothing. He bindeth up the Waters in his thick Clouds, and the Cloud is not rent under them. He holdeth back the Face of his Throne, and ſpreadeth his Cloud upon it. He hath compaſſed the Waters with Bounds, until the Day and Night come to

an end. The Pillars of Heaven tremble, and are aſtoniſhed at his Reproof. He divideth the Sea with his Power, and by his Underſtanding he ſmiteth through the Proud. By his Spirit he hath garniſhed the Heavens; his Hand hath formed the crooked Serpent. Lo, theſe are Parts of his Ways: but how little a Portion is heard of him? but the Thunder of his Power who can underſtand?

God underſtandeth the Way of Wiſdom, and he knoweth the Place thereof. For he looketh to the Ends of the Earth, and ſeeth under the whole Heaven. To make the Weight for the Winds, and he weigheth the Waters by meaſure. When he made a Decree for the Rain, and a Way for the Lightning of the Thunder: Then did he ſee it, and declare it, he prepared it, yea and ſearched it out. And unto Man he ſaid, behold, the Fear of the Lord that is Wiſdom, and to depart from Evil is Underſtanding. xxviii. 23--28.

Behold, God is great, and we know him not, neither can the Number of his Years be ſearched out. For he maketh ſmall the Drops of Water: They pour down Rain according to the Vapour thereof: Which the Clouds do drop, and diſtill upon Man abundantly. Alſo can any underſtand the Spreadings of the Clouds, or the Noiſe of his Tabernacle? Behold, he ſpreadeth his Light upon it, and covereth the Bottom of the Sea. For by them judgeth he the People, he giveth Meat in Abundance. With Clouds he covereth the Light; and commandeth it not to ſhine, by the Cloud that cometh betwixt. The Noiſe thereof ſheweth concerning it, the Cattel alſo concerning the Vapour. xxxvi. 26-33.

At

xxxvii. 1--34. At this alſo my Heart trembleth, and is moved out of his Place. Hear attentively the Noiſe of his Voice, and the Sound that goeth out of his Mouth. He directeth it under the whole Heaven, and his Lightning unto the Ends of the Earth. After it a Voice roareth: He thundreth with the Voice of his Excellency, and he will not ſtay them when his Voice is heard. God thundreth marvellouſly with his Voice; great Things doth he, which we cannot comprehend. For he ſaith to the Snow, Be thou on the Earth; likewiſe to the ſmall Rain, and to the great Rain of his Strength. He ſealeth up the Hand of every Man, that all Men may know his Work. Then the Beaſts go into Dens, and remain in their Places. Out of the *South* cometh the Whirlwind: and Cold out of the *North*. By the Breath of God, Froſt is given: and the Breadth of the Waters is ſtraitned. Alſo by watering he wearieth the thick Cloud: He ſcattereth his bright Cloud. And it is turned round about by his Counſels: That they may do whatſoever he commandeth them upon the Face of the World in the Earth. He cauſeth it to come, whether for Correction, or for his Land, or for Mercy. Hearken unto this, O *Job*: Stand ſtill: and conſider the wondrous Works of God. Doſt thou know when God diſpoſed them, and cauſed the Light of his Cloud to ſhine? Doſt thou know the Balancings of the Clouds, the wondrous Works of him which is perfect in Knowledge? How thy Garments are warm, when he quieteth the Earth by the *South-wind*? Haſt thou with him ſpread out the Sky, which is ſtrong, and as a Molten Looking-Glaſs? Teach us what we ſhall ſay unto

unto him; for we cannot order our Speech by reaſon of Darkneſs. Shall it be told him that I ſpeak? if a Man ſpeak, ſurely he ſhall be ſwallowed up. And now Men ſee not the bright Light which is in the Clouds: But the Wind paſſeth and cleanſeth them. Fair Weather cometh out of the North: With God is terrible Majeſty. Touching the Almighty, we cannot find him out: He is excellent in Power, and in Judgment, and in Plenty of Juſtice: He will not afflict. Men do therefore fear him: He reſpecteth not any that are wiſe of Heart.

[*See Chap.* xxxviii, xxxix, xl, xli. Gen i. *with* 4 Eſd. vi. 38--54.]

Moſes.] And leſt thou lift up thine Eyes unto Heaven, and when thou ſeeſt the Sun, and the Moon, and the Stars, even all the Hoſt of Heaven, ſhouldeſt be driven to worſhip them, and ſerve them, which the Lord thy God hath divided unto all Nations under the whole Heaven. Deut. iv. 19.

Joſhua.] And as ſoon as we had heard theſe Things our Hearts did melt, neither did there remain any more Courage in any Man, becauſe of you: For the Lord your God, he is God in Heaven above, and in Earth beneath. Joſhua ii. 11.

Nehemiah.] Then the *Levites*, *Jeſhua* and *Kadmiel*, *Bani*, *Haſhabniah*, *Sherebiah*, *Hodijah*, *Shebaniah*, and *Pethahiah*, ſaid, Stand up and bleſs the Lord your God for ever and ever; and Bleſſed be thy glorious Name, which is exalted above all Bleſſing and Praiſe. Thou, even Thou art Lord alone, thou haſt made Heaven, the Heaven of Heavens with all their Hoſt, the Earth and all Things that are therein, the Seas and all that is therein, and thou preſerveſt them all, and the Hoſt of Heaven worſhippeth thee. Nehemiah ix. 5, 6.

Pſal. viii. 3–9. *David.*] When I conſider thy Heavens, the Work of thy Fingers, the Moon and the Stars which thou haſt ordained; What is Man that thou art mindful of him? And the Son of Man, that thou viſiteſt him? For thou haſt made him a little lower than the Angels, and haſt crowned him with Glory and Honour. Thou madeſt him to have Dominion over the Works of thy Hands; thou haſt put all Things under his Feet: All Sheep and Oxen, yea, and the Beaſts of the Field: The Fowl of the Air, and the Fiſh of the Sea, and whatſoever paſſeth through the Paths of the Seas. O Lord our Lord, how excellent is thy Name in all the Earth!

xix. 1–6. The Heavens declare the Glory of God: And the Firmament ſheweth his Handy-work. Day unto Day uttereth Speech, and Night unto Night ſheweth Knowledge. There is no Speech nor Language, where their Voice is not heard. Their Line is gone out through all the Earth, and their Words to the end of the World: In them hath he ſet a Tabernacle for the Sun. Which is as a Bridegroom coming out of his Chamber, and rejoyceth as a ſtrong Man to run a Race. His going forth is from the End of the Heaven, and his Circuit unto the Ends of it: And there is nothing hid from the Heat thereof.

cxlviii. 1–13. Praiſe ye the Lord. Praiſe ye the Lord from the Heavens: praiſe him in the Heights. Praiſe ye him all his Angels: praiſe ye him all his Hoſts. Praiſe ye him Sun and Moon: praiſe him all ye Stars of Light. Praiſe him ye Heavens of Heavens, and ye Waters that be above the

the Heavens. Let them praiſe the Name of the Lord: for he commanded, and they were created. He hath alſo ſtabliſhed them for ever and ever: He hath made a Decree which ſhall not paſs. Praiſe the Lord from the Earth, ye Dragons, and all Deeps. Fire and Hail, Snow and Vapour, ſtormy Wind fulfilling his Word. Mountains and all Hills, fruitful Trees and all Cedars. Beaſts and all Cattel, creeping Things, and flying Fowl. Kings of the Earth, and all People; Princes, and all Judges of the Earth. Both young Men and Maidens, old Men and Children. Let them praiſe the Name of the Lord: for his Name alone is excellent, his Glory is above the Earth and Heaven.

[*See* civ, cxxxix, cxlv].

Solomon.] But will God indeed dwell on the Earth? Behold, the Heaven, and Heaven of Heavens cannot contain thee, how much leſs this Houſe that I have builded. 1 Kings viii. 27.

But who is able to build Him an Houſe, ſeeing the Heaven, and Heaven of Heavens cannot contain him? Who am I then that I ſhould build him an Houſe, ſave only to burn Sacrifice before him? 2 Chron. ii. 6.

The Lord by Wiſdom hath founded the Earth; by Underſtanding hath he eſtabliſhed the Heavens. By his Knowledge the Depths are broken up, and the Clouds drop down the Dew. Prov. iii. 19, 20.

As thou knoweſt not what is the Way of the Spirit, nor how the Bones do grow in the Womb of her that is with Child: even ſo thou knoweſt not the Works of God who maketh all. Eccleſ. xi. 5.

Iſaiah xl. 12--17. *Iſaiah.*] Who hath meaſured the Waters in the Hollow of his Hand? And meted out Heaven with the Span, and comprehended the Duſt of the Earth in a Meaſure, and weighed the Mountains in Scales, and the Hills in a Balance? Who hath directed the Spirit of the Lord, or being his Counſellor hath taught him? With whom took he Counſel, and who inſtructed him, and taught him in the Path of Judgment, and taught him Knowledge, and ſhewed to him the Way of Underſtanding? Behold, the Nations are as a Drop of a Bucket, and are counted as the ſmall Duſt of the Balance: Behold, he taketh up the Iſles as a very little Thing. And *Lebanon* is not ſufficient to Burn, nor the Beaſts thereof ſufficient for a Burnt Offering. All Nations before him are as nothing, and they are counted to him leſs than Nothing, and Vanity.

xlv. 5--8, I am the Lord, and there is none elſe, there is no God beſides me: I girded thee, though thou haſt not known me: That they may know from the riſing of the Sun, and from the *Weſt*, that there is none beſides me, I am the Lord, and there is none elſe. I form the Light, and create Darkneſs: I make Peace, and create Evil: I the Lord do all theſe Things. Drop down, ye Heavens, from above, and let the Skies pour down Righteouſneſs! Let the Earth open, and let them bring forth Salvation, and let Righteouſneſs ſpring up together: I the Lord have ver. 18. created it.---For thus ſaith the Lord that created the Heavens, God himſelf that formed the Earth and made it, he hath eſtabliſhed it, he created it not in vain, he formed it to be inhabited, I am the Lord, and there is none elſe.

Thus

Thus ſaith the Lord, the Heaven is my Throne, and the Earth is my Footſtool: Where is the Houſe that ye build unto me? And where is the Place of my Reſt? For all thoſe Things hath mine Hand made, and all thoſe Things have been, ſaith the Lord: But to this Man will I look, even to him that is poor, and of a contrite Spirit, and trembleth at my Word. lxvi. 1, 2

Jeremiah.] Fear ye not me? Saith the Lord: Will ye not tremble at my Preſence; which have placed the Sand for the Bound of the Sea, by a perpetual Decree that it cannot paſs it; and though the Waves thereof toſs themſelves, yet can they not prevail; though they roar, yet can they not paſs over it? Jeremiah v. 22.

But the Lord is the true God, he is the living God, and an everlaſting King: At his Wrath the Earth ſhall tremble, and the Nations ſhall not be able to abide his Indignation. Thus ſhall ye ſay unto them, the Gods that have not made the Heavens, and the Earth, even they ſhall periſh from the Earth, and from under theſe Heavens. He hath made the Earth by his Power, he hath eſtabliſhed the World by his Wiſdom, and hath ſtretched out the Heavens by his Diſcretion. When he uttereth his Voice, there is a Multitude of Waters in the Heavens, and he cauſeth the Vapours to aſcend from the Ends of the Earth: He maketh Lightnings with Rain, and bringeth forth the Wind out of his Treaſures. x. 10--13.

Am I a God at hand, ſaith the Lord, and not a God afar off? Can any hide himſelf in ſecret Places that I ſhall not ſee him? ſaith the Lord: Do not I fill Heaven and Earth? ſaith the Lord. xxiii. 23, 24.

xxxi. 35. Thus ſaith the Lord, which giveth the Sun for a Light by Day, and the Ordinances of the Moon and of the Stars for a Light by Night, which divideth the Sea when the Waves thereof roar; the Lord of Hoſts is his Name.

xxxii. 17. Ah Lord God, Behold thou haſt made the Heaven and the Earth, by thy great Power and ſtretched-out Arm, and there is nothing too hard for thee.

Daniel iv. 34, 35. *Daniel.*] And at the End of the Days, I *Nebuchadnezzar* lift up mine Eyes unto Heaven, and mine Underſtanding returned unto me, and I bleſſed the moſt High, and I praiſed and honoured him that liveth for ever, whoſe Dominion is an Everlaſting Dominion, and his Kingdom is from Generation to Generation. And all the Inhabitants of the Earth are reputed as nothing: And he doth according to his Will in the Army of Heaven, and among the Inhabitants of the Earth: And none can ſtay his Hand, or ſay unto him, What doſt thou?

v. 22, 23. And thou his Son, O *Belſhazzar*, haſt not humbled thine Heart, though thou kneweſt all this: But haſt lifted up thy ſelf againſt the Lord of Heaven, and they have brought the Veſſels of his Houſe before thee, and thou, and thy Lords, thy Wives and thy Concubines have drunk Wine in them, and thou haſt praiſed the Gods of Silver and Gold, of Braſs, Iron, Wood and Stone, which ſee not, nor hear, nor know. And the God in whoſe Hand thy Breath is, and whoſe are all thy Ways, haſt thou not glorified.

Amos v. 8. *Amos.*] Seek him that maketh the Seven Stars and *Orion*, and turneth the Shadow of Death into the Morning, and maketh the Day dark with

with Night: That calleth for the Waters of the Sea, and poureth them out upon the Face of the Earth, the Lord is his Name.

Jonah.] And he ſaid unto them, I am an *Hebrew*, and I fear the Lord the God of Heaven, which hath made the Sea and the Dry Land. Jonah i. 9.

Habakkuk.] A Prayer of *Habakkuk* the Prophet upon *Sigionoth*. O Lord, I have heard thy Speech and was afraid: O Lord, revive thy Work in the midſt of the Years, in the midſt of the Years make known; in Wrath remember Mercy. God came from *Teman*, and the Holy One from Mount *Paran*. *Selah.* His Glory covered the Heavens, and the Earth was full of his Praiſe. And his Brightneſs was as the Light, he had Horns coming out of his Hand, and there was the hiding of his Power. Before him went the Peſtilence, and burning Coals went forth at his Feet. He ſtood and meaſured the Earth: He beheld, and drove aſunder the Nations, and the everlaſting Mountains were ſcattered, the perpetual Hills did bow: His Ways are everlaſting. I ſaw the Tents of *Cuſhan* in Affliction: And the Curtains of the Land of *Midian* did tremble. Was the Lord diſpleaſed againſt the Rivers? Was thine Anger againſt the Rivers? Was thy Wrath againſt the Sea, that thou didſt ride upon thine Horſes, and thy Chariots of Salvation? Thy Bow was made quite naked, according to the Oaths of the Tribes, even thy Word. *Selah.* Thou didſt cleave the Earth with Rivers. The Mountains ſaw thee, and they trembled: The overflowing of the Water paſſed by: The Deep uttered his Voice, and lift up his Hands on high. The Sun and Moon ſtood ſtill in their Habitation: At the Habakkuk iii. 1–19.

Light of thine Arrows they went, and at the ſhining of thy glittering Spear. Thou didſt march through the Land in Indignation, thou didſt threſh the Heathen in Anger. Thou wenteſt forth for the Salvation of thy People, even for Salvation with thine Anointed; thou woundedſt the Head out of the Houſe of the Wicked, by diſcovering the Foundation unto the Neck. *Selah.* Thou didſt ſtrike through with his Staves the Head of his Villages: They came out as a Whirlwind to ſcatter me: Their Rejoycing was as to devour the poor ſecretly. Thou didſt walk through the Sea with thine Horſes, through the Heap of great Waters. When I heard, my Belly trembled: My Lips quivered at the Voice: Rottenneſs entred into my Bones, and I trembled in my ſelf, that I might reſt in the Day of Trouble: When he cometh up unto the People, he will invade them with his Troops. Although the Fig-tree ſhall not bloſſom, neither ſhall Fruit be in the Vines, the Labour of the Olive ſhall fail, and the Fields ſhall yield no Meat, the Flock ſhall be cut off from the Fold, and there ſhall be no Herd in the Stalls: Yet I will rejoyce in the Lord, I will joy in the God of my Salvation. The Lord God is my Strength, and he will make my Feet like Hinds Feet, and he will make me to walk upon mine high Places. To the chief Singer on my ſtringed Inſtruments.

Eccl. xlii. 15--25.

Sirach.] I will now remember the Works of the Lord, and declare the Things that I have ſeen: In the Words of the Lord are his Works. The Sun that giveth Light, looketh upon all Things, and the Work thereof is full of the Glory of the Lord. The Lord hath not given Power

Power to the Saints to declare all his marvellous Works, which the Almighty Lord firmly ſettled, that whatſoever is might be eſtabliſhed for his Glory. He ſeeketh out the Deep, and the Heart, and conſidereth their crafty Devices: For the Lord knoweth all that may be known, and he beholdeth the Signs of the World. He declareth the Things that are paſt, and for to come, and revealeth the Steps of hidden Things. No Thought eſcapeth him, neither any Word is hidden from him. He hath garniſhed the excellent Works of his Wiſdom, and he is from Everlaſting to Everlaſting: Unto him may nothing be added, neither can he be diminiſhed, and he hath no need of any Counſellor. Oh how deſirable are all his Works! And that a Man may ſee even to a Spark. All theſe Things live and remain for ever, for all Uſes, and they are all Obedient. All Things are double one againſt another: And He hath made nothing imperfect. One Thing eſtabliſheth the good of another: And who ſhall be filled with beholding his Glory?

The Pride of the Height, the clear Firmament, the Beauty of Heaven, with his glorious Shew; The Sun when it appeareth, declaring at his Riſing a marvellous Inſtrument, the Work of the moſt High. At Noon it parcheth the Country, and who can abide the burning Heat thereof? A Man blowing a Furnace is in Works of Heat, but the Sun burneth the Mountains three Times more; breathing out fiery Vapours, and ſending forth bright Beams, it dimmeth the Eyes. Great is the Lord that made it, and at his Commandment it runneth haſtily. He made the Moon alſo to ſerve in her Seaſon, for a Declaration xliii. 1-33.

claration of Times, and a Sign of the World. From the Moon is the ſign of Feaſts, a Light that decreaſeth in her Perfection. The Month is called after her Name, increaſing wonderfully in her changing, being an Inſtrument of the Armies above, ſhining in the Firmament of Heaven; The Beauty of Heaven, the Glory of the Stars, an Ornament giving Light in the higheſt Places of the Lord. At the Commandment of the Holy One, they will ſtand in their Order, and never faint in their Watches. Look upon the Rainbow, and praiſe him that made it, very beautiful it is in the Brightneſs thereof. It compaſſeth the Heaven about with a glorious Circle, and the Hands of the moſt High have bended it. By his Commandment he maketh the Snow to fall apace, and ſendeth ſwiftly the Lightnings of his Judgment. Through this the Treaſures are opened, and Clouds fly forth as Fowls. By his great Power he maketh the Clouds firm, and the Hailſtones are broken ſmall. At his Sight the Mountains are ſhaken, and at his Will the South-wind bloweth. The noiſe of the Thunder maketh the Earth to tremble; ſo doth the Northern Storm and the Whirlwind: As Birds flying he ſcattereth the Snow, and the falling down thereof is as the Lighting of Graſhoppers. The Eye marvelleth at the Beauty of the Whiteneſs thereof, and the Heart is aſtoniſhed at the raining of it. The Hoar-froſt alſo as Salt he poureth on the Earth, and being congealed, it lieth on the top of ſharp Stakes. When the cold North-wind bloweth, and the Water is congealed into Ice, it abideth upon every gathering together of Water, and cloatheth the Water as with

with a Breaſt-plate. It devoureth the Mountains, and burneth the Wilderneſs, and conſumeth the Graſs as Fire. A preſent Remedy of all is a Miſt *coming ſpeedily*: A Dew coming after Heat, refreſheth. By his Counſel he appeaſeth the Deep, and planteth Iſlands therein. They that ſail on the Sea, tell of the Danger thereof, and when we hear it with our Ears, we marvel thereat. For therein be ſtrange and wondrous Works, Variety of all Kinds of Beaſts, and Whales created. By him the end of them hath proſperous Succeſs, and by his Word all Things conſiſt. We may ſpeak much, and yet come ſhort: Wherefore in ſum, he is all. How ſhall we be able to magnify him? For he is great above all his Works. The Lord is terrible, and very great, and marvellous is his Power. When ye glorify the Lord, exalt him as much as ye can; for even yet will he far exceed: And when ye exalt him, put forth all your Strength, and be not weary; for ye can never go far enough. Who hath ſeen him that he might tell us? and who can magnify him as he is? There are yet hid greater Things then theſe be, for we have ſeen but a few of his Works. For the Lord hath made all Things, and to the Godly hath he given Wiſdom.

Baruch. Who hath gone up into Heaven and taken Wiſdom, and brought her down from the Clouds? Who hath gone over the Sea, and found her, and will bring her for pure Gold? No Man knoweth her Way, nor thinketh of her Path. But he that knoweth all Things, knoweth her, and hath found her out with his Underſtanding: He that prepared the Earth for ever- Baruch iii. 29–35.

evermore, hath filled it with four-footed Beaſts. He that ſendeth forth Light, and it goeth; calleth it again, and it obeyeth him with fear. The Stars ſhined in their Watches, and rejoyced: When he calleth them, they ſay, Here we be: and ſo with chearfulneſs they ſhewed Light unto him that made them. This is our God, and there ſhall none other be accounted of in compariſon of him.

[*See Song of the Three Children at large.*]

Manaſſes *Prayer.*

Manaſſes.] O Lord, Almighty God of our Fathers, *Abraham*, *Iſaac*, and *Jacob*, and of their Righteous Seed, who haſt made Heaven and Earth, with all the Ornament thereof; who haſt bound the Sea by the Word of thy Commandment; who haſt ſhut up the deep, and ſealed it by thy terrible and glorious Name; whom all Men fear, and tremble before thy Power; for the Majeſty of thy Glory cannot be born, and thine angry threatning towards Sinners is importable: but thy merciful Promiſe is unmeaſurable, and unſearchable: for thou art the moſt High Lord, of great Compaſſion, Long-ſuffering, very Merciful, and repenteſt of the evils of Men.

Acts xvii. 23--28.

Paul.] For as I paſſed by, and beheld your Devotions, I found an Altar with this Inſcription, TO THE UNKNOWN GOD. Whom therefore ye ignorantly Worſhip, him declare I unto you. God that made the World, and all Things therein, ſeeing that he is Lord of Heaven and Earth, dwelleth not in Temples made with Hands: Neither is worſhipped with Mens Hands, as though he needed any Thing, ſeeing he giveth to all Life and Breath, and all Things; And hath made of one Blood all Nations

tions of Men, for to dwell on all the Face of the Earth: And hath determined the Times before appointed, and the Bounds of their Habitation. That they ſhould ſeek the Lord, if haply they might feel after him, and find him, though he be not far from every one of us. For in him we Live, and Move, and have our Being; as certain alſo of your own Poets have ſaid, for we are alſo his Offſpring.

Becauſe that which may be known of God, is manifeſt in them; for God hath ſhewed it unto them. For the Invifible Things of him are clearly ſeen from the Creation of the World, being underſtood by the Things that are made, *even* his Eternal Power and Godhead; ſo that they are without Excuſe. Rom. i. 19, 20.

John.] And every Creature which is in Heaven, and on the Earth, and under the Earth, and ſuch as are in the Sea, and all that are in them, heard I, ſaying, Bleſſing, and Honour, and Glory, and Power, *be* unto him that ſitteth upon the Throne, and unto the Lamb for ever and ever. Rev. v. 13.

Clement.] The Heavens holding faſt to his Appointment, are ſubject to him in Peace. Day and Night accompliſh the Courſes that he has allotted unto them, not diſturbing one another. The Sun and Moon, and all the ſeveral Companies and Conſtellations of the Stars, run the Courſes that he has appointed to them in Concord, without departing in the leaſt from them. The Fruitful Earth yields its Food plentifully in due Seaſon both to Man and Beaſt, and to all that is upon it, according to 1 Epiſtle, § 20.

his

his Will; not diſputing, nor altering any Thing of what was order'd by him. So alſo the untrodden and unſearchable Floods of the Deep are kept in by his Command: And the Conflux of the vaſt Sea being brought together at the Creation into its ſeveral Collections, paſſes not the Bounds that he has ſet to it; but as he then appointed it, ſo it remains. For he ſaid, *Hitherto ſhalt thou come, and thy Floods ſhall be broken within thee.* The Ocean, unpaſſable to Mankind, and the Worlds that are beyond it, are govern'd by the ſame Commands of their Maſter. Spring and Summer, Autumn and Winter, give Place peaceably to each other. The ſeveral Quarters of the Winds, fulfil their Work in their Seaſons, without offending one another. The ever-flowing Fountains, made both for Pleaſure and Health, never fail to reach out their Breaſts to ſupport the Life of Men. Even the ſmalleſt Creatures live together in Peace and Concord with each other. All theſe has the Great Creator and Lord of all, commanded to obſerve Peace and Concord; being Good to all: But eſpecially to Us who flee to his Mercy through our Lord Jeſus Chriſt, to whom be Glory and Maieſty for Ever and Ever. *Amen.*

vii. 34. *Apoſtles in their Conſtitutions.*] Thou art Bleſſed, O Lord, the King of Ages, who by Chriſt haſt made the whole World, and by him in the Beginning didſt reduce into order the diſorder'd Parts. Who dividedſt the Waters from the Waters by a Firmament, and didſt put into them a Spirit of Life; who didſt fix the Earth, and ſtretch out the Heaven, and didſt diſpoſe every Creature by an accurate Conſtitution: For by thy Power,

Power, O Lord, the World is Beautify'd, the Heaven is fix'd as an Arch over us, and is rendred illuſtrious with Stars for our Comfort in the Darkneſs: The Light alſo and the Sun were begotten for Days, and the Production of Fruit; and the Moon for the Change of Seaſons, by its Increaſe and Diminutions; and one was called Night, and the other Day. And the Firmament was exhibited in the midſt of the Abyſs, and thou commandeſt the Waters to be gathered together, and the dry Land to appear. But as for the Sea it ſelf, who can poſſibly deſcribe it? Which comes with Fury from the Ocean, yet runs back again, being ſtopp'd by the Sand at thy Command; for thou haſt ſaid, * *Thereby ſhall her Waves be broken.* Thou haſt alſo made it capable of ſupporting little and great Creatures, and made it Navigable for Ships. Then did the Earth become Green, and was planted with all ſorts of Flowers, and the Variety of ſeveral Trees; and the ſhining Luminaries, the Nouriſhers of thoſe Plants, preſerve their unchangeable Courſe, and in nothing depart from thy Command. But where thou biddeſt them, there do they riſe and ſet, for Signs of the Seaſons, and of the Years, making a conſtant Return of the Work of Men. Afterwards the Kinds of the ſeveral Animals were created, thoſe belonging to the Land, to the Water, to the Air, and both to Air and Water; and the Artificial Wiſdom of thy Providence does ſtill impart to every one a ſuitable Providence. For as he was not unable to produce different Kinds, ſo neither has he diſdain'd to exerciſe a different Providence towards every one. And

* Job xxxviii. 11.

at the Concluſion of the Creation thou gaveſt Direction to thy Wiſdom, and formedſt a reaſonable Creature, as the Citizen of the
Gen. i. 26. World, ſaying, *Let us make Man after our Image, and after our Likeneſs*; and haſt exhibited him as the Ornament of the World, and formed him a Body out of the Four Elements, thoſe primary Bodies, but hadſt prepared a Soul out of nothing, and beſtowedſt upon him his Five Senſes, and didſt ſet over his Senſations a Mind, as the Conducter of the Soul. And, beſides all theſe Things, O Lord God, who can worthily declare the Motion of the Rainy Clouds, the ſhining of the Lightning, the Noiſe of the Thunder, in order to the Supply of proper Food, and the moſt agreeable Temperature of the Air? But when Man was diſobedient, thou didſt deprive him of the Life which ſhould have been his Reward; yet didſt thou not deſtroy him for ever, but laidſt him to Sleep for a Time, and thou didſt by Oath call him to a Reſurrection, and looſedſt the Bond of Death; O thou Reviver of the Dead, through Jeſus Chriſt, who is our Hope.

vii. 35. Great art thou, O Lord Almighty, and Great is thy Power, and of thy Underſtanding there is no Number. Our Creator and Saviour, rich in Benefits, Long-ſuffering, and the Beſtower of Mercy, who doſt not take away thy Salvation from thy Creatures; for thou art good by Nature, and ſpareſt Sinners, and inviteſt them to Repentance; for Admonition is the Effect of thy Bowels of Compaſſion; for how ſhould we abide if we were requir'd to come

come to Judgment immediately, when after ſo much Long-ſuffering, we hardly get clear of our miſerable Condition? The Heavens declare thy Dominion, and the Earth ſhakes with Earthquakes, and, hanging upon nothing, declares thy unſhaken Stedfaſtneſs. The Sea raging with Waves, and feeding a Flock of Ten thouſand Creatures, is bounded with Sand, as ſtanding in awe at thy Command; and compels all Men to cry out, * *How great are thy Works, O Lord! In Wiſdom haſt thou made them all! The Earth is full of thy Creation.* And the bright Hoſt of Angels, and the Intellectual Spirits ſay to *Palmoni*, † *There is but one Holy Being:* And the Holy Seraphim, together with the Six-winged Cherubim, who ſing to Thee their Triumphal Song, cry out with never-ceaſing Voices, * *Holy, Holy, Holy, Lord God of Hoſts; Heaven and Earth are full of thy Glory:* And the other Multitudes of the Orders, Angels, Arch-Angels, Thrones, Dominions, Principalities, Authorities and Powers, cry aloud, and ſay, ‖ *Bleſſed be the Glory of the Lord out of his Place.* But *Iſrael*, thy Church on Earth, taken out of the *Gentiles*, emulating the Heavenly Powers, Night and Day, with a full Heart, and a willing Soul, ſings, * *The Chariot of God is ten thouſandfold, thouſands of the proſperous: The Lord is among them in* Sinai, *in the holy Place.* The Heaven knows him who fix'd it as a Cube of Stone, in the Form of an Arch, upon nothing; who united the Land and Water to one another, and ſcatter'd the Vital Air all abroad, and conjoin'd Fire therewith for Warmth, and Comfort againſt Darkneſs. The Choir of Stars ſtrikes us with

* Pſal. ciii. 24.

† Dan. viii. 13.

* Iſa. vi. 3.

‖ Ezek. iii. 12.

*Pſal. lxvii. 18.

Admiration, declaring him that numbers them, and ſhewing him that names them; the Animals declare him that puts Life into them; the Trees ſhew him that makes them grow: All which Creatures, being made by thy Word, ſhew forth the Greatneſs of thy Power. Wherefore every Man ought to ſend up an Hymn from his very Soul to thee, through Chriſt, in the Name of all the reſt, ſince he has Power over them all, by thy Appointment. For thou art kind in thy Benefits, and beneficent in thy Bowels of Compaſſion; who alone art Almighty; for when thou willeſt, to be able is preſent with Thee; for thy eternal Power both quenches Flame, and ſtops the Mouths of Lions, and tames Whales, and raiſes up the Sick, and over-rules the Power of all Things, and overturns the Hoſt of Enemies, and caſts down a People numbred in their Arrogance. Thou art he who art in Heaven, he who art on Earth, he who art in the Sea, he who art in finite Things, thy Self unconfin'd by any thing: For of thy Majeſty there is no Boundary: For 'tis not ours, O Lord, but the Oracle of thy Servant, who ſaid, † *And thou ſhalt know in thine Heart, that the Lord thy God he is God, in Heaven above, and on Earth beneath, and there is none beſides Thee*: For there is no God beſides Thee alone, there is none holy beſides Thee, the Lord, the God of Knowledge, the God of Saints, holy above all holy Beings; for they are ſanctified by thy Hands: Thou art Glorious, and highly exalted, inviſible by Nature, and unſearchable in thy Judgments; whoſe Life is without Want, whoſe Duration can never fail, whoſe Operation is without Toil, whoſe

† Deut. iv. 39.

whoſe Greatneſs is unlimited, whoſe Excellency is perpetual, whoſe Habitation is inacceſſible, whoſe Dwelling is unchangeable, whoſe Knowledge is without Beginning, whoſe Truth is immutable, whoſe Work is without Aſſiſtants, whoſe Dominion cannot be taken away, whoſe Monarchy is without Succeſſion, whoſe Kingdom is without End, whoſe Strength is irreſiſtible, whoſe Army is very numerous. For thou art the Father of Wiſdom, the Creator of the Creation, by a Mediator, as the Cauſe. The Beſtower of Providence, the Giver of Laws, the Supplier of Want, the Puniſher of the Wicked, and the Rewarder of the Righteous; the God and Father of Chriſt, and the Lord of thoſe that are Pious towards Him; whoſe Promiſe is infallible, whoſe Judgment without Bribes, whoſe Sentiments are immutable, whoſe Piety is inceſſant, whoſe Thankſgiving is everlaſting, through whom Adoration is worthily due to Thee from every rational and holy Nature.

" *Hermas.*] Behold the mighty Lord, who by his vid. l. 3.
" invincible Power, and with his excellent Wiſ-
" dom made the World, and by his glorious
" Counſel encompaſſed the Beauty of his Crea-
" ture, and with the Word of his Strength fix'd
" the Heaven, and founded the Earth upon the
" Waters; and by his powerful Vertue eſta-
" bliſh'd his Holy Church, which he hath
" bleſſed: Behold, he will remove the Heavens,
" and the Mountains, the Hills and the Seas;
" and all things ſhall be made Plain for his
" Elect; that he may render unto them the Pro-
" miſe which he has promiſed with much Ho-
" nour and Joy; if ſo be that they ſhall keep

" the Commandments of God, which they have
" received with great Faith.

viii. 20. *Author of the Recognitions.*] But ſomebody may ſay, that theſe things are done by *Nature*. Now in this caſe the Contention is only about a Word. For while 'tis certain that the World is the Work of a Mind, and of Reaſon, what you call *Nature* I call *God the Creator*. And clear it is, that neither formerly nor now could it be, that either the Species of Bodies, adorn'd with ſuch neceſſary Diſtinctions; or the Faculties of the Mind, ſhould be made by any Labour, without Reaſon, and without Senſe. And now, if you look on the Philoſophers as proper Witneſſes in this caſe, *Plato* gives us his Teſtimony in his *Timæus*; where in his diſcuſſion of this Queſtion, about the Frame of the World, Whether it always was, or had a Beginning, he pronounces that it was made. For, ſays he, 'tis viſible, palpable, and corporeal; and all things of that Nature were certainly made. Now what was made, has without queſtion ſome Author by whom it was made. But then, as he adds, To diſcover this Maker and Parent of all Things, is no eaſy thing; and when you have diſcover'd him, to impart your diſcovery to the vulgar, is plainly impoſſible. Theſe are certainly *Plato*'s words. But ſuppoſing that he and the other Philoſophers among the *Greeks* had been diſpos'd to ſay nothing about the making of the World, would it not ſtill be a plain caſe to all that had common Underſtanding? For what Man is there, I mean one of at leaſt ſome ſmall Capacity, who upon the ſight of an Houſe with all its Furniture fitted for Mens various Neceſſities, whoſe Top is

adorn'd

adorn'd with a ſpherical Cupolo, beautify'd with variety of ſplendid Draughts and ſeveral ſorts of Pictures, and adorn'd with the faireſt and largeſt Lights; who is there, I ſay, that upon the view of ſuch a Fabrick will not immediately pronounce that it was fram'd by a moſt wiſe and moſt powerful Architect? And can any one be found ſo fooliſh, as upon the ſight of the Work of Heaven, and the view of the ſplendor of the Sun and Moon, the regular Courſe of the Stars, with their various Kinds and Motions, and that ſees all determin'd by proper Laws, and to ſuitable Periods; to forbear to cry out, that theſe things were made by a wiſe and rational Artificer, or rather by Wiſdom and Reaſon it ſelf?

But now if you deſire to be a Follower of others of the *Greek* Philoſophers, and are vers'd in Mechanicks, what they deliver about theſe Celeſtial things muſt have certainly come to your knowledge: For they ſuppoſe that the Heavens are like a Sphere, on every ſide evenly ſituate, and having the ſame reſpect to every part, and equally diſtant from the Center of the Earth; and that therefore they ſtand ſo firm by the equality of their Libration, that the evenneſs of their Situation does not allow them to bend any one way more than another; and that by this means the Sphere is ſuſtain'd without any Prop to ſupport it. Now if this Machine of the World bears really this Similitude, there is a clear demonſtration of Divine Workmanſhip therein. But if, as others ſuppoſe, this ſpherical Arch is ſupported by the Waters; either as it floats on their Surface, or as it turns round within them, even on thoſe viii. 21.

Hypotheſes the Workmanſhip of the great Artificer is manifeſted therein.

viii. 22. But leſt the Arguments of this kind, which all are not capable to underſtand, ſhould ſeem of an uncertain nature, let us proceed to ſuch as every one can comprehend. Who is it that has order'd the Courſes of the Stars with ſo great Judgment, and appointed their times of Riſing and Setting, and ordain'd every one of them to hold its courſe in the Heavens in certain and fix'd Periods? Who is it that has permitted ſome of them to go always Weſtward, and others to return ſometimes Eaſtward? Who is it that has fix'd Limits to the Courſes of the Sun, that he might determine Hours, and Days, and Months, and the Viciſſitudes of Seaſons by its different Motions; and by the ſure adjuſtment of its Courſe diſtinguiſh thoſe Seaſons into Winter firſt, then the Spring, after that the Summer, and Autumn; ſo as ſtill to determine the annual Period by the ſame Revolutions? Who is there, I ſay, but muſt pronounce the Divine Wiſdom it ſelf to be the Manager of ſo regular a Syſtem? And ſo much for that Hypotheſis which the *Greeks* have form'd about the Syſtem of the Heavens.

viii. 23. What alſo can be ſaid to thoſe Appearances which belong to the Land and to the Sea? Are not we plainly taught by them, that God did not only make theſe Parts of the World, but that he exerciſes a Providence over them alſo? For therefore are there high Mountains in ſome certain Places in every part of the World, that the Air which is, as it were, compreſs'd and ſtraiten'd by them, may, according to the appointment of God, be crowded and forc'd out

for

for Winds; whereby the Fruits grow, and the Heat of Summer is temper'd, at the time when the warm *Pleiades* are heated by the fierceneſs of the Sun. But you will ſay, why was there ſuch an intenſe Heat in the Sun at all, which ſhould require to be temper'd? Pray how could the Fruits of the Earth, which are ſo neceſſary for the Uſes of Mankind, be ripen'd without it? Beſides, take notice of another Thing, that near the *Equator*, where the greateſt Heat is, there is no great compreſſion of the Clouds; nor does any mighty quantity of Rain fall there, leſt it ſhould breed Diſeaſes among the Inhabitants. For moiſt Clouds, if they be as it were bak'd with an intenſe Heat, do render the Air corrupt and peſtilential. As alſo the Earth, when it receives over-warm Rain, does not afford Nouriſhment to the Corn, but deſtroys it. Which Management who can doubt but 'tis the Effect of the Divine Providence? To conclude with the Caſe of *Egypt*, which becauſe 'tis near the burning Heat of *Ethiopia*, and ſo if it ſtood in abſolute Neceſſity of Rain, would have its Air intolerably corrupted; its Fields are therefore ſupply'd, not by Rain, which is deriv'd from the Clouds; but they enjoy a kind of terreſtrial Rain, by the Inundations of the *Nile*.

What is alſo to be ſaid about the Fountains and Rivers, which run with a conſtant Current into the Sea? and yet all is ſo fitted by the Divine Providence, that thoſe Rivers do not want a plentiful Current of Water; and yet that the Sea, which receives ſuch vaſt Quantities of Water, ſeems not to be augmented; but thoſe Elements continue in the ſame Proportion, both thoſe which carry, and thoſe which receive that viii. 24.

Supply of Water: the ſalt Water ſtill naturally conſuming the ſweet Streams mixed with it. Herein therefore the Effects of Providence are manifeſt, that it ſhould make that Element Salt whereto the Courſe of all thoſe Waters which it had afforded for the Uſes of Men, was to carry them; that ſo the full Cavity of the Sea might never, in all the Series of Ages, bring upon the Earth and upon Men, any fatal Inundation of Waters. And there is no Man ſo fooliſh to ſuppoſe ſo great an Inſtance of Reaſon and of Providence could be taken care of by any irrational Nature.

viii. 25. What ſhall I ſay about Plants and about Animals? Is it not the Effect of Providence, that when they are to be diſſolv'd by Old Age, the Plants ſhould be repair'd again, either by young Plants, or by Seeds, which proceed from themſelves; and the Animals by the Propagation of Poſterity? And indeed, 'tis by the ſurprizing Conduct of Providence, that Milk is provided in the Breaſts againſt the time when the Young one is born; and that the ſame young one, as ſoon as 'tis born, without any Inſtructor, knows where to look for the Places wherein its Nouriſhment is laid up for it. And then Males as well as Females are brought forth; that by the means of both, Poſterity may be provided for. But now leſt, as Men are ready to imagine, theſe Events might ſeem to happen according to ſome fix'd Courſe of Nature, and not by the Diſpenſation of the Creator, he ordain'd that ſome few Creatures ſhould propagate their Kind upon Earth after a different manner, for an Indication and Sign of his Providence: That for Example, the Raven ſhould bring forth her Young

Young at the Mouth, and the Weezle propagate at the Ear; that ſome ſort of Fowls, as Hens, ſhould bring forth Eggs, addle either by the Wind or the Duſt; that ſome other Creatures ſhould change the Male by Turns, into the Female, and every Year alter their Sex; as Hares and the Hyænæ, which they call Monſters; that ſome ſhould ariſe out of the Earth, and take thence their Fleſh, as Moles; others out of Aſhes, as Vipers; others out of putrefy'd Fleſh, as Waſps out of the Fleſh of Horſes, and Bees out of that of Kine; others out of Cows Dung, as Beetles; others out of Herbs, as the Scorpion out of *Baſil*; and on the contrary, that Herbs ſhould ſpring out of Animals, as Smallage and Aſparagus out of the Horn of a Stag or of a Roe-Buck.

And indeed to what Purpoſe ſhould I reckon up more Examples wherein the Divine Providence, by changing that Courſe which is ſuppos'd to be appointed by Nature, has in many Reſpects varied the Circumſtances of the Birth of Animals? Whereby might be ſhew'd not any irrational Courſe of Things, but God the Diſpoſer of all Things might rationally be demonſtrated. Is there not alſo in another Inſtance, a compleat Demonſtration of the Workmanſhip of Divine Providence? In that I mean, when Seeds that are ſown are repair'd for the Uſes of Human Life? Which Seeds when they are committed to the Ground, the Soil, by the Will of God, affords them that Moiſture it has receiv'd, as if it were Milk for their Nouriſhment. For there is in the Waters a certain Power of the Spirit of God, which was afforded them at the beginning, by whoſe Efficiency the entire viii. 26.

entire future Body begins to be form'd in the very Seed, and to be reſtor'd again by its Stem and its Ear: For when a Grain of the Seeds is ſwell'd by the Moiſture, that Power of the Spirit which was beſtow'd on the Waters, and being incorporeal eaſily runs through certain narrow Channels of the Veins, invigorates the Seeds till they grow larger, and frames the Species of them as they grow. It comes to paſs therefore, that by the Means of the moiſt Element, wherein this vital Spirit is ever inſerted and implanted, that not only the Corn is repair'd in general, but that it returns again, as to its Species and Form, entirely like thoſe Seeds which were ſow'd. Which Regularity of Operation, who that has the leaſt Senſe can believe to be thus perform'd by an irrational Nature, and not by the Divine Wiſdom? To conclude, Even theſe Things are form'd after the ſimilitude of a Human Birth; for the Earth appears to retain the Place of the Womb, where the Seed when it is caſt into it, is form'd and nouriſh'd by the Power of Water and of the Spirit, as we have ſaid already.

viii. 27.] Moreover, the Divine Providence is herein alſo to be admir'd, that it has order'd all, ſo that we can indeed ſee and know what is made; but how, and after what manner it is made, is hidden and conceal'd from us; that they may not be diſcoverable by thoſe that are unworthy, but may be diſclos'd to ſuch as are worthy and faithful, and have merited ſuch a Favour. Now that we may prove by Experiments and Inſtances, that the Seeds do not receive any Part of the Terrene Matter, but are made up entirely of the Element of Water, and of the Virtue of that

that Spirit which is included therein; Do you ſuppoſe, for Example's ſake, that the Weight of an Hundred Talents of Earth were put into a large Veſſel; and the ſeveral Kinds of Seeds were ſow'd therein, either of Herbs, or of larger Plants; and that they had a ſufficient Quantity of Water to moiſten them; and let this Proceſs be continued ſeveral Years. And then let the Grain which has ſprung from them, ſuppoſe of Wheat or Barley, or of any other ſort, be gather'd together, every Year's Product by it ſelf, till the Heap of every Kind of Grain is ariſen to the Weight of an Hundred Talents. Then let the Trees themſelves be pluck'd up, and weigh'd; and when they are all taken out of the Veſſel, yet will the Earth it ſelf, when it is weigh'd, afford you its entire original Hundred Talents again notwithſtanding. Whence then ſhall we ſay that all that Weight, and all that Quantity of different Sorts of Grain, and of the Trees has ariſen? Is it not plain that 'tis from the Water? For the Earth retains its own entirely, while the Water which was poured on every one of them, wholly diſappears; and all this by the powerful Efficacy of the Divine Diſpoſal of the Creator, which by the very Element of Water both repairs the Subſtances, and frames the Species of ſuch Seeds and Plants, and preſerves their Species with great Increaſe.

From all which Inſtances I think it is abundantly evident to all Men, that all Things are made, and every Thing does ſubſiſt by the Skill of a wiſe Being, and not by the Operation of Brutal Nature. But now let us proceed, if you pleaſe, to our own Conſtitution, or that viii. 28.

of

of a Man, who is a little World included in the other; And let us conſider with what Art he is compounded, and thereby you will ſee in an eſpecial Manner the Wiſdom of the Creator. Now though he be made up of different Subſtances, of that which is Mortal, and that which is Immortal, yet by the Skill and Providence of his Creator is it brought to paſs that theſe different Subſtances, which are ſo widely remote one from the other, admit of an Union; For one Part is taken from the Earth, and fram'd by the Creator; while the other is deriv'd from the Immortal Subſtances. And yet is the Advantage of Immortality not at all infring'd by ſuch a Conjunction. Nor is he made up of rational, and concupiſcible, and iraſcible Parts; but ſuch ſorts of Faculties as thoſe, are rather to be ſuppos'd Affections belonging to him; whereby he may be carried to thoſe ſeveral ſorts of Objects. For the Body, which conſiſts of Bones and Fleſh, owes its Original to the Seed of the Male, which Heat fetches out of the Marrow, and conſigns over to the Womb, as to a proper Soil, whereto it adheres: And when it has by little and little been moiſten'd, by the flowing of the Blood to it, it becomes Fleſh and Bones; and is made up after the Species of him who caſt in the Seed.

viii. 29. Behold now the Contrivance of the Artificer herein! how he has inſerted the Bones as certain Pillars, whereby the Fleſh might be ſuſtain'd and ſupported. Beſides this, conſider how a juſt Meaſure is preſerv'd on both Sides; I mean on the right Side, and on

on the Left; ſo that one Foot agrees with the other, and one Hand with the other, one Set of Fingers with the other; that ſo every one of them might agree with his Fellow, without the leaſt Inequality: Which is the Caſe alſo as to the one Eye with the other, and the one Ear with the other; which Members do not only reſemble and agree with one another, but are alſo ſo fram'd as to ſerve for the neceſſary Occaſions of Life. The Hand, for Inſtance, is ſo diſpos'd as to be fit for Work, the Feet for walking, the Eyes for ſeeing, as guarded by the Eye-brows; the Ears are ſo fram'd for Hearing, that like a Drum they ſend the rebounding Sound of Words deep into the Head, and even as far as the Senſation of the Soul; as does the Tongue, when 'tis mov'd upon the Teeth, ſupply the Place of a Quill. Thoſe Teeth alſo are ſo form'd, that ſome chew and divide the Food, and ſend it to others, who are more inward; and thoſe Teeth that are more inward are ſo fram'd, that, like Milſtones, they chew and break it ſmall; that ſo it may be deliver'd to the Stomach in a ſtate fit for Digeſtion. Whence it is that theſe Teeth have the Name of *Grinders* beſtowed on them.

Beſides theſe, the Noſtrils were made for viii. 30.
the Paſſage of the Breath to and fro, in Expiration and Inſpiration; that the natural Heat which is in the Heart, may by the Acceſs of freſh Air, be heated or cooled by the Operation of the Lungs; which are therefore plac'd in the Breaſt, that by its Softneſs it may cheriſh and enliven the Heart, in whoſe vigo-

vigorous State Life ſeems to conſiſt. I ſay the Life, not the Soul. For what ſhall I ſay of the Subſtance of the Blood? Which is like a River, proceeding from a Fountain, which at firſt is carry'd along one Channel, but then is deriv'd farther by innumerable Veins, as by ſo many Pipes; and ſo waters the entire Soil of a human Body with vital Streams; whereto the Liver is alſo aſſiſting, which is ſituate on the Right Side, for the more effectual Digeſtion of the Food, and its Converſion into Blood: While the Place of the Spleen is on the Left Side, that it may attract to it ſelf, and after a ſort cleanſe the Blood of its Impurities.

viii. 31. And as to the Contrivance of the Inteſtines, how wonderful is it! For therefore are they join'd together in long Foldings, like Circles, that they may leiſurely throw off the Remains of the Food after Digeſtion, that ſo the Receptacles of the Nouriſhment may not be ſuddenly empty'd; and yet there may no Hindrance ariſe from the Food that is taken afterwards. But therefore are they contriv'd to be Membranaceous, that the Parts without them may by degrees receive from them their moiſt Nutriment; that ſo it may not go away at once, and leave the Bowels themſelves empty; nor be hindred by the Thickneſs of the Skin, and leave the other Parts dry, and diſorder thereby the whole Human Fabrick with inevitable Thirſt.

viii. 32. Moreover, who is there whom the Poſition of the Feminine Parts, and the Receptacle of the Womb, moſt exactly fitted for receiving

receiving the *Embryo*, and for cheriſhing and quickning it, will not perſuade that what was made was made by Reaſon and Prudence? That the Woman ſhould only differ from the Man in thoſe Parts whereby Poſterity was to be provided for and ſecur'd? As alſo, that the Frame of the Man ſhould be different from that of the Woman, in thoſe Parts only wherein the Power of Semination and Generation does reſide? And herein certainly there is an illuſtrious Teſtimony of Providence afforded us; I mean in this neceſſary Diverſity of the Parts. But yet this Teſtimony is ſtronger where we find an External Reſemblance, and yet a Difference as to Uſe, and a Variety as to Operation. For ſo it is in the Paps, which are both in Men and Women; yet ſo that thoſe of Women alone are capable to receive Milk, in order to the Infant's finding a proper Nutriment as ſoon as it is Born. Now therefore, if we ſee the Members diſpos'd in Men with ſo great Skill, that while the Shape of all the other Parts is the ſame, thoſe alone do admit of a Difference, wherein the ſeveral Uſes require that Diverſity; and while there is nothing in a Man that is ſuperfluous or wanting, nor any Thing in a Woman that is too little or too much; who is there that does not evidently conclude from all theſe Obſervations, that all is the Effect of Reaſon, and of the Wiſdom of the Creator?

The ſame Thing is confirm'd by the agreeable Diverſity there is among other Animals, viii. 33.

mals, every one of which are ſuited to their proper Uſe and Service. This is alſo confirm'd from the Variety there is in Trees; the Diverſity there is in Herbs; with the Difference of their Species and Juices: As it is alſo from the Changes of the Seaſons of the Year, as diſtinguiſh'd into Four Parts, one ſucceeding another; from the regular Succeſſion of Hours, Days, and Months in the annual Period; which Period never exceeds its appointed Limits one ſingle Hour. Hence, Laſtly, is it that the Age of the World it ſelf is to be eſtimated at a certain Number of Years, without any Variation.

viii. 44. But you will ſay, When was the World made? And why ſo lately? This you might as well have pretended, though it had been made ſooner; for you might ſtill have ſaid, Why not ſooner yet? For when you had gone backwards never ſo many Ages, you might always aſk, Why not ſooner ſtill? But we are not now diſcourſing of this Matter, Why it was not made ſooner than it was made; but whether it were made at all or not. For if it fully appears to have been made, 'twas certainly the Work of a Powerful and Supreme Artificer: Which when it is once ſettled, we muſt leave it to the Diſpoſal and Judgment of the wiſe Artificer, when he thought fit to make it. Unleſs you will ſuppoſe, that all the Wiſdom which fram'd this vaſt Structure of the World, and form'd all the diſtinct Sorts and Species of Beings, ſo as to diſpoſe their Conſtitutions not

not only to be agreeable in Point of Beauty, but withal moſt ſuitable and neceſſary for the Uſes they were to be put to afterward, was only uncapable of this one Thing; I mean of chuſing a proper Time for the rearing ſo magnificent a Building. Certainly he is not at a loſs for ſufficient Reaſons, and evident Cauſes, why, and when, and how he would make the World; which were not ſurely to be reveal'd to Men, while they are ſcarce able to enquire after, and underſtand theſe Things that are before their Eyes, and are Teſtimonials of his Providence. For what is conceal'd in private, and is repoſited within the wiſeſt Underſtanding, as within a Royal Treaſury, is diſclos'd to none but to thoſe who have learn'd from him with whom they are intruſted and repoſited. 'Tis God therefore who made all Things, and was himſelf made by none. But for thoſe that put the Name of *Nature*, for that of *God*; and ſo affirm, that all Things were made by *Nature*, they do not perceive the Miſtake about that Appellation. For if they ſuppoſe this Nature to be Irrational, 'tis egregious Folly to imagine that a Creation where Reaſon is ſo viſible, ſhould proceed from a Maker who is deſtitute of it. But if this Nature be Reaſon, or the Word, whereby 'tis evident all Things were made, they chuſe another Name to no Purpoſe; while they profeſs that he that created them is endued with Reaſon.

N. B. The following Teſtimonies, from the anoient Heathen Writers, are generally taken from the very Learned Dr. *Cudworth*'s *Intellectual Syſtem of the Univerſe*, and that nearly as he has tranſlated them; where the Originals of them may alſo be conſulted by the inquiſitive Reader. A few others here are added out of the *Sibylline* Oracles, and from thoſe Two moſt diligent and uſeful Naturaliſts, Mr. *Ray* and Mr. *Derham*; it being perfectly needleſs to make a new and larger Collection of my own out of the ancient Authors themſelves, in ſo known and ſo endleſs a Matter as this is. At the Concluſion I have omitted moſt of the Chriſtian Writers, as here of leſs Force, and as without Number; excepting a very few of the moſt eminent of our modern Philoſophers; who were of the Laity alſo; and ſo on all Accounts truly unexceptionable Witneſſes in this Caſe.

Cudworth p. 249. *Orpheus.*] We will firſt ſing a pleaſant and delightful Song concerning the ancient *Chaos*; How Heaven, Earth and Seas were framed out of it: As alſo concerning that much-wiſe and ſagacious Love, the oldeſt of all, and Self-Perfect, which actually produced all theſe things, ſeparating one thing from another.

p. 300. Firſt of all, the Æther was made by God, and after the Æther a Chaos, a dark and dreadful Night, then covering all under the whole Æther. —— *Orpheus* having declared alſo in his Explication, that there was a certain incomprehenſible Being, which was the Higheſt and Oldeſt of all things, and the Maker of every thing, even of the Æther it ſelf, and of all things under the Æther. But the Earth being then inviſible, by reaſon of the Darkneſs, a Light breaking out through the Æther illuminated the whole Creation.

tion. This *Light* being ſaid by him to be that Higheſt of all Beings, (beforementioned,) which is called alſo *Counſel*, and *Life*; theſe three Names in *Orpheus* (*Light*, *Counſel*, and *Life*,) declaring one and the ſame Force and Power of that GOD who is the Maker of all, and who produceth all out of nothing into Being, whether viſible or inviſible.

Wherefore, together with the Univerſe, were made within *Jove*, the Height of the Æthereal Heaven, the Breadth of the Earth and Sea, the great Ocean, the profound *Tartara*, the Rivers and Fountains, and all the other things, all the immortal Gods and Goddeſſes: Whatſoever hath been or ſhall be was at once contained in the Womb of *Jove*. p. 303.

The high thundring *Jove* is both the firſt and the laſt, *Jove* is both the Head and the Middle of all things: All things were made out of *Jove*. *Jove* is the Profundity of the Earth, and Starry Heaven; *Jove* is the Breath of all things; *Jove* is the Force of the untameable Fire; *Jove* is the Bottom of the Sea; *Jove* is the Sun, Moon, and Stars; *Jove* is both the Original and King of all things. There is One Power, and One God, and One great Ruler over all. *See page* 304, 305. p. 304.

Thales.] *Thales* ſaid, that Water was the firſt Principle of all Corporeal things; but that GOD was that Mind which formed all things out of Water. p. 21.

Pythagoras.] *Pythagoras* thought, that GOD was a Mind paſſing through the whole Nature of Things, from whom our Souls were, as it were, cut off. p. 373.

Behold we ſee clearly, that *Pythagoras* held there was One GOD of the whole Univerſe, p. 377.

the Principle and Cauſe of all things, the Illuminator, Animator and Quickner of the whole, and the Original of Motion; from whom all things were deriv'd, and brought out of Non-entity into Being.

p. 233. *Onatus.*] It ſeemeth to me that there is not One GOD only, but that there is *One*, the greateſt and higheſt God, that governeth the whole World, and that there are *Many* other Gods beſides him, differing as to Power: That One GOD reigning over them all, who ſurmounts them all in Power, Greatneſs and Virtue. This is that GOD who contains and comprehends the whole World; but the other Gods are thoſe, who, together with the Revolution of the Univerſe, orderly follow that firſt and intelligible GOD.

p. 396. They who maintain that there is only one GOD, and not many Gods, are very much miſtaken; as not conſidering aright, what the Dignity and Majeſty of the Divine Tranſcendency chiefly conſiſteth in; namely in Ruling and Governing thoſe which are like to it, and in excelling and ſurmounting others, and being ſuperior to them. But all thoſe other Gods which we contend for, are to that firſt and intelligible GOD as but the Dancers to the *Coryphæus* or *Choragus*, and as the inferior common Soldiers to the Captain or General; to whom it properly belongs to follow and comply with their Leader and Commander. The Work indeed is common, or the ſame to them both; to the Ruler and them that are Ruled; but they that are Ruled could not orderly conſpire and agree together into one Work, were they deſtitute of a Leader; as the Singers and Dancers could not conſpire together into one Harmony and Dance, were they deſtitute of a *Corypheus*;

Coryphæus; nor Soldiers make up an orderly Army, were they without a Captain or Commander.

Epicharmus.] Nothing is concealed from the Divinity: This well deſerves your Knowledge. He is the Inſpector of us. Nothing is impoſſible with GOD. p. 263.

Philolaus.] GOD is the Prince and Ruler of all, always one, ſtable, immoveable, like to himſelf, but unlike to every thing elſe. p. 393.

Archytas.] Whoſoever is able to reduce all Kinds of things under one and the ſame Principle, this Man ſeems to me to have found out an excellent *Specula*, or high Station; from whence he may be able to take a large View and Proſpect of GOD, and of all other things; and he ſhall clearly perceive that GOD is the Beginning, and End, and Middle of all things that are performed according to Juſtice and Right Reaſon. ibid.

Xenophanes.] There is one GOD, the greateſt both among Gods and Men. —— He moveth the whole World without any Labour or Toil, meerly by Mind. *Theophraſtus* affirms, that *Xenophanes* the *Colophonian*, *Parmenides* his Maſter, made one Principle of all things; he calling it *One and All*, and determining it to be neither finite nor infinite, (in a certain Senſe,) and neither moving nor reſting. Which *Theophraſtus* alſo declares, that *Xenophanes* in this did not write as a Natural Philoſopher, or Phyſiologer, but as a Metaphyſician, or Theologer only. *Xenophanes* his *One and All*, being nothing elſe but GOD, whom he proved to be one ſolitary Being from hence, becauſe GOD is the beſt and moſt powerful of all things; and there being many Degrees of Entity, there muſt needs be ſomething Supreme to rule p. 377, 378.

Rule over all; which beſt and moſt powerful Being can be but one; he alſo did demonſtrate it to be unmade, as likewiſe to be neither finite nor infinite, (in a certain Senſe,) as he removed both Motion and Reſt from GOD. Wherefore when he ſaith that GOD always remaineth or reſteth the ſame, he underſtands not this of that Reſt which is oppoſite to Motion, and which belongs to ſuch things as may be moved, but of a certain other Reſt which is both above that Motion and its Contrary.

p. 379. *Heraclitus.*] O you Unwiſe and Unlearned, teach us firſt what GOD is, that ſo you may be believ'd in accuſing me of Impiety. Tell us where GOD is. Is he ſhut up within the Walls of Temples? Is this your Piety, to place GOD in the dark, or to make him a ſtony GOD? O you unskilful! know ye not that GOD is not made with Hands, and hath no *Baſis* or *Fulcrum* to ſtand upon, nor can be incloſed within the Walls of any Temple? The whole World, variouſly adorn'd with Plants, Animals and Stars, being his Temple. —— Am I impious, O *Euthycles!* who alone know what GOD is? Is there no GOD without Altars? or are Stones the only Witneſſes of him? No, His own Works give Teſtimony to Him, and principally the Sun; Night and Day bear witneſs of Him; the Earth bringing forth Fruits declares Him; The Circle of the Moon, that was made by Him, is an Heavenly Teſtimony of Him.

p. 505. *Heraclitus*'s Deſcription of GOD is this, That moſt ſubtle and moſt ſwift Subſtance which permeates and paſſes through the whole Univerſe; by which all created things were made.

Zoroaſtres.]

Zoroaſtres.] GOD is the firſt, incorruptible, eternal, unmade, indiviſible, unlike to every thing elſe, the Head and Leader of all Good, one that cannot be bribed, the Beſt of the Good, the Wiſeſt of the Wiſe: He is alſo the Father of Equity and Juſtice, Self-taught, Perfect, and the only Inventor of what is naturally Holy. p. 291.

Anaxagoras.] *Anaxagoras* affirmed, that there was, beſides Atoms, an ordering and diſpoſing Mind, that was the Cauſe of all things;---which was the only ſimple, unmixed, and pure thing in the World. p. 26.

He was the firſt, (that is, among the *Ionick* Philoſophers) who brought in Mind and GOD to the *Coſmopœia*; and did not derive all things from ſenſeleſs Bodies. Mind, the firſt Maker of the World; Mind, that which ſtill governs the ſame; the King and Supreme Monarch of Heaven and Earth. p. 380.

Mind is mingled with nothing, but is alone by it ſelf, and ſeparate: For if it were not by it ſelf, diſtinct from Matter, but mingled therewith, it would then partake of all things; becauſe there is ſomething of all in every thing; which things mingled together with it would hinder it; ſo that it could not maſter or conquer any thing, as if alone by it ſelf. For Mind is the moſt ſubtile of all things, and the moſt pure, and has the Knowledge of all things, together with an abſolute Power over all. p. 381.

Parmenides.] He deſcribes the Supreme Deity as the *one and all*, immutable; as one ſingle, ſolitary, and moſt ſimple Being; unmade, or ſelf-exiſtent, and neceſſarily exiſtent, incorporeal, and devoid of Magnitude, altogether immutable, or unchangeable, whoſe Duration therefore was ve- p. 388.

ry different from that of ours, and not in a Way of Flux, or temporary Succeſſion, but a *conſtant Eternity.*

p. 389, 390. *Parmenides, Meliſſus*, and *Xenophanes.*] Perhaps, ſays *Simplicius*, it will not be improper for us to digreſs a little here, and to gratify the ſtudious and inquiſitive Reader, by ſhewing how thoſe ancient Philoſophers, tho' ſeeming to diſſent in their Opinions concerning the Principles of the Univerſe, did notwithſtanding harmoniouſly agree together. As firſt of all, they who diſcourſed concerning the intelligible and firſt Principle of all, *Xenophanes*, *Parmenides*, and *Meliſſus*; of whom *Parmenides* called it *one*, *finite*, and *determined*, becauſe as Unity muſt needs exiſt before Multitude, ſo that which is to all things the Cauſe of Meaſure, Bound, and Determination, ought rather to be deſcrib'd by Meaſure and what is Finite, than by Infinity; as alſo that which is every way Perfect, and hath attained its own End, or rather is the End of all things, (as it was the Beginning,) muſt needs be of a determinate Nature: For that which is imperfect, and therefore indigent, hath not yet attain'd to its Term or Meaſure. But *Meliſſus*, though he conſidered the Immutability of the Deity likewiſe, yet attending to the inexhauſtible Perfection of its Eſſence, the Unlimitedneſs and Unboundedneſs of its Power, declareth it to be Infinite, as well as Unbegotten or Unmade. Moreover *Xenophanes* looking upon the Deity as the Cauſe of all things, and above all things, placed it above Motion, and Reſt, and all thoſe Oppoſitions of inferior Beings; as *Plato* likewiſe doth in the firſt Hypotheſis of his *Parmenides.* Whereas *Parmenides*

des and *Meliſſus* attending to its Stability, and conſtant Immutability, and its being perhaps above Energy and Power, praiſed it as immoveable.

Zeno Eleates.] *Zeno*, ſays *Ariſtotle*, by his one *Ens* which neither was moved, nor moveable, meaneth GOD. —— If GOD be the beſt of all things, then He muſt needs be One.---- This is GOD, and the Power of GOD, to prevail, conquer and rule over all. Wherefore by how much any thing falls ſhort of the Beſt, by ſo much does it fall ſhort of being GOD. Now if there be ſuppoſed more ſuch Beings, whereof ſome are better, ſome are worſe; theſe could not be all Gods, becauſe it is eſſential to GOD not to be tranſcended by any. But if they be conceiv'd to be ſo many equal Gods, then would it not be the Nature of GOD to be the Beſt: One Equal being neither better nor worſe than another. Wherefore if there be a GOD, and this be the Nature of Him, then can there be but One. And indeed otherwiſe He could not be able to do whatſoever he would. p. 390, 391.

Empedocles.] He is happy who hath his Mind richly fraught and ſtored with Treaſures of Divine Knowledge; but he miſerable, whoſe Mind is darkned, as to the Belief of a GOD.---- He denied GOD to be Corporeal;----- and affirmed that he is only an Holy and Ineffable Mind, that by ſwift Thoughts agitates the whole World. p. 26.

Ecphantus and *Arceſilas.*] *Ecphantus* and *Arceſilas* held the corporeal World to conſiſt of Atoms; but yet to be ordered and governed by a Divine Providence. ibid.

Many of the oldeſt Philoſophers.] It was a moſt ancient, and in a Manner univerſally received p. 248.

ceived Tradition among the *Pagans*, that the *Coſmogonia*, or Generation of the World, took its firſt Beginning from a *Chaos*: This Tradition having been delivered down from *Orpheus*, and *Linus*, by *Heſiod*, and *Homer*, and others; acknowledged by *Epicharmus*, and embraced by *Thales*, *Anaxagoras*, *Plato*, and other Philoſophers; and the Antiquity whereof is declared by *Euripides*.

P. 363, 364. *Euripides*.] *Euripides*'s Prayer is, That GOD would infuſe Light into the Souls of Men; whereby they might be enabled to know what is the Root from whence all their Evils ſpring, and by what Means they may avoid them. And elſewhere,

Thou ſelf-ſprung Being, that doſt all enfold,
And in thine Arms Heav'ns whirling Fabrick hold,
Who art encircled with reſplendent Light,
And yet ly'ſt mantled o're in ſhady Night;
About whom the exultant Starry Fires
Dance nimbly round in everlaſting Gyres.

P. 363. *Sophocles*.] There is in Truth one only GOD, who made Heaven and Earth, the Sea, Air, and Winds, *&c.*

P. 399. *Socrates*.] I am now convinced, ſays *Ariſtodemus* to *Socrates*, from what you ſay, that the Things of this World were the Workmanſhip of ſome wiſe Artificer, who alſo was a Lover of Animals: —— Do you think that you only have Wiſdom in your ſelf, and that there is none elſe in the World without you? —— Is Mind and Underſtanding therefore the only thing which you fancy you have ſome way or other luckily got, and ſnatched unto your ſelf, whilſt there

there is no ſuch thing any where in the World without you? All thoſe infinite things therein being thus orderly diſpoſed by Chance? ---- Neither do you ſee your own Soul which rules over your Body: So that you might for the ſame Reaſon conclude your ſelf to do nothing by Mind and Underſtanding neither, but all by Chance, as well as that all things in the World are done by Chance. ------ How much the more magnificent and illuſtrious that Being is which takes care of you, ſo much the more in all Reaſon ought it to be honoured by you. ------ Conſider, Friend, I pray you, if that Mind which is in your Body does order and diſpoſe it every way as it pleaſes, why ſhould not that Wiſdom which is in the Univerſe be able to order all things therein alſo as ſeemeth beſt to it? And if your Eye can diſcern things ſeveral Miles diſtant from it, why ſhould it be thought impoſſible for the Eye of GOD to behold all things at once? Laſtly, if your Soul can mind things both here, and in *Egypt*, and in *Sicily*, why may not the great Mind or Wiſdom of GOD be able to take care of all things, in all Places? ----GOD is ſuch and ſo great a Being, as that he can at once ſee all things, hear all things, and be preſent every where, and take care of all Affairs. ---The other Gods giving us good things, do it without viſibly appearing to us; and that GOD who framed and containeth the whole World, in which are all good and excellent things, and who continually ſupplieth us with them, He, though He be ſeen to do the greateſt things of all, yet notwithſtanding is Himſelf inviſible and unſeen: Which ought the leſs to be wondered at by us, becauſe the Sun, which is manifeſt to all, yet

will

will not ſuffer himſelf to be exactly and diſtinctly view'd; but if any one boldly and impudently gaze upon him, will deprive him of his Sight. As alſo becauſe the Soul of Man, which moſt of all things in him partaketh of the Deity, tho' it be that which manifeſtly rules in us, yet it is never ſeen. Which Particulars he that conſiders, ought not to deſpiſe inviſible things, but to honour the Supreme Deity, taking Notice of his Power from his Effects.

p. 63. *Plato.*] Whoſoever had but the leaſt of Seriouſneſs and Sobriety in them, whenſoever they took in hand any Enterprize, whether great or ſmall, they would always invoke the Deity for Aſſiſtance and Direction.

p. 155. Thoſe things which are ſaid to be done by Nature, are indeed done by Divine Power.

p. 402. When I begin my Epiſtles with *GOD*, then may you conclude I write ſeriouſly; but not ſo when I begin with Gods.

p. 404. *Plato* calls the Supreme GOD, *The GOD*: The Architect or Artificer of the World; the Maker and Father of this Univerſe; whom it is hard to find out, but impoſſible to declare to the vulgar: The GOD over all; The Creator of Nature: The ſole Principle of the Univerſe: The Cauſe of all things: Mind, the King of all things: That Sovereign Mind which orders all things, and paſſes through all things: The Governor of the whole: That which always is, and was never made: The Firſt GOD: The greateſt GOD, and the greateſt of the Gods: He that governeth or produceth the Sun: He that makes the Earth, and Heaven, and the Gods, and doth all things both in Heaven, and Hell, and under the Earth.

Ariſtotle.]

Ariſtotle.] *Ariſtotle* plainly affirms, that all the Philoſophers before himſelf did aſſert the World to have been made, or have had a Beginning. p. 118.

There is more of Deſign or final Cauſe, and of wiſe Contrivance, in the Works of Nature, than in thoſe of human Art. p. 165.

It is more probable that the whole World was at firſt made by Art, (if at leaſt it were made,) and that it is ſtill preſerved by the ſame, than that mortal Animals ſhould be ſo. For there is much more of Order and determinate Regularities in the heavenly Bodies, than in our ſelves; but more of Fortuitouſneſs and Want of Regularity among theſe mortal things. Notwithſtanding which, ſome there are who, tho' they cannot but acknowledge that the Bodies of Animals were all framed by an artificial Nature, yet they will needs contend that the Syſtem of the Heavens ſprung meerly from Fortune and Chance; altho' there be not the leaſt Appearance of Chance or Incogitancy in it. p. 168.

If there be any ſuch Subſtance as this that is ſeparate (from Matter, or Incorporeal) and immoveable (as we ſhall afterwards endeavour to ſhew that there is;) then the Divinity ought to be placed here; and this muſt be acknowledged to be the firſt and moſt proper Principle of all. p. 386.

All Men have an Opinion or Perſuaſion that there are Gods. And they who think ſo, as well *Barbarians*, as *Greeks*, attribute the higheſt Place to that which is Divine; as ſuppoſing the immortal Heavens to be moſt accommodate to immortal Gods. p. 409.

Unleſs there were ſomething elſe in the World beſides what is *ſenſible*, there could be neither Beginning nor Order; but one thing would be the p. 413.

Principle

Principle of another infinitely, or without End. ---It is not at all likely that either Fire, or Earth, or any ſuch Body ſhould be the Cauſe of that Fitneſs or Proportion that is in the World. Nor can ſo noble an Effect as this be reaſonably imputed to Chance or Fortune.

p. 475, 476. *Aratus.*] Let us begin with *Jove*: Him of whom we Men are never ſilent; and of whom all things are full. He penetrating and pervading all, and being every where; and whoſe Beneficence we conſtantly make uſe of and enjoy; for we alſo are his Off-ſpring; who as a kind and benign Father ſheweth lucky Signs to Men: For he alſo fixeth the Signs in Heaven, diſtinguiſhing Conſtellations, and appointing Stars to riſe and ſet at ſeveral Times of the Year. Therefore is he always propitiated, and appeaſed both firſt and laſt. Hail, O Father! the great Wonder of the World, and the Intereſt of Mankind.

p. 432, 433, 434. *Cleanthes.*] *Cleanthes*'s Prayer to the Supreme GOD. 'Hail *Jove!* moſt glorious of the immortal Beings, who haſt many Names, and art 'ever Omnipotent, the Author of Nature, governing all things by Law. For all Mortals are 'allowed to addreſs to thee. For we are thy Off-'ſpring; tho' a meer Imitation or Eccho of Thee, 'even all of us who live and creep upon the 'Earth. Wherefore I will ſing an Hymn to 'Thee, and always Praiſe Thy Power. All this 'round World that circles about the Earth obeys 'Thee, whitherſoever Thou guideſt it, and vo-'luntarily ſubmits to Thy Government. Such 'two-edged, fiery, and ever-living, Thunder haſt 'Thou, as Thy Inſtrument, under Thy victori-'ous Hands; for all Nature trembles under Thy 'Stroke; by the ſame doſt Thou rule that com-

'mon Reaſon [or Word] which penetrates
'through all Things. So great and Supreme a
'King art Thou always; nor is there, O Spirit,
'any Work done upon Earth without Thee,
'nor in the æthereal and divine Heaven, nor in
'the Sea, but what the Wicked do by their own
'Folly. What is diſordered Thou reduceſt in-
'to Order, and what is inimical Thou rendreſt
'friendly to Thee. In ſuch a Manner doſt
'Thou adjuſt the confuſed State of things,
'good and bad, that there ariſes a rational Sy-
'ſtem of Beings, perpetually going on, which
'all the Wicked avoid, and will not acquieſce
'in: Miſerable as they are, who ſtill, tho' de-
'ſirous of the Enjoyment of Happineſs, have no
'Regard to the common Law of GOD, nor will
'hearken thereto; which if they would ſubmit
'to they might enjoy a ſound Mind, and a hap-
'py Life: But they indeed do without Goodneſs
'bend their Inclinations to ſeveral things; ſome
'affect the troubleſome Toil of Ambition; others
'turn themſelves to Covetouſneſs, without any
'Regard to Decency; others give themſelves to
'Reſt, and the Pleaſures of the Body. But do
'Thou, O *Jove*, the Giver of all things, who
'inhabiteſt in the dark Clouds, and governeſt
'the Thunder, Deliver Men from their fooliſh
'and unhappy Inclinations, and drive ſuch Paſ-
'ſions away from their Souls. Grant them Skill
'to underſtand this Thy Determination, accord-
'ing to which thou with Juſtice governeſt all
'things; that ſo we, finding our ſelves honoured
'of Thee, may pay back the Tribute of our
'Honour to Thee, by celebrating thy Works in
'our Hymns perpetually, as it becomes a Mor-
'tal Being to do: For there is not any nobler

'thing

‘ thing which either mortal Men, or the Gods ‘ themſelves can be employ'd in, than to cele- ‘ brate righteouſly by Hymns the common Law ‘ of the entire Syſtem.

p. 255. *Cicero.*] The Entire Nature or the Univerſe is governed by the Force, Reaſon, Power, Mind, and Divinity of the Immortal Gods.

p. 258. The Minds of Citizens ought to be firſt of all embued with a firm Perſuaſion that the Gods are the Lords and Moderators of all things, and that the Conduct and Management of the whole World is directed and over-ruled by their Judgment and Divine Power; that they deſerve the beſt of Mankind; that they behold and conſider what every Man is, what he doth, and takes upon himſelf; with what Mind, Piety, and Sincerity he obſerves the Duties of Religion; and, laſtly, that theſe Gods have a very different Regard to the pious and the impious.

p. 434. That there is ſome moſt excellent and eternal Nature, which is to be admired and honoured by Mankind, the Beauty of the World, and the Order of the Heavenly Bodies compel us to confeſs.

ibid. Who is ſo mad or ſtupid, as when he looks up to Heaven is not preſently convinced there are Gods? or can perſwade himſelf, that thoſe things which are made with ſo much Mind and Wiſdom, as that no human Skill is able to reach and comprehend the Artifice and Contrivance of them, did all happen by Chance?

p. 435. I ſay that the World, and all its Parts, were at firſt conſtituted by the Providence of the Gods.

p. 436. We muſt needs acknowledge that the Benefits of this Life, the Light which we enjoy, and the Spirit which we breathe, are imparted to us from GOD.

There is, there is certainly such a Divine Force in the World. Neither is it reasonable to think that in these gross and frail Bodies of ours, there should be something which hath Life, Sense, and Understanding: and yet no such thing in the whole Universe. Unless Men will therefore conclude that there is none, because they see it not: As if we could see our own Mind, (whereby we order and dispose all things, and whereby we reason and speak thus,) and perceive what kind of thing it is, and where it is lodged. ibid.

Neither can GOD himself be understood by us otherwise than as a certain distinct and free Mind, separate from all mortal Concretion, which both perceives and moves all things. ibid.

When we behold these and other wonderful Works of Nature, can we at all doubt but that there presideth over them either One Maker of all, if they had a Beginning, as *Plato* conceiveth; or else, if they always were, as *Aristotle* supposeth, One Moderator and Governor? ibid.

Without Government neither any House, nor City, nor Nation, nor Mankind in general, nor the entire Nature of things, nor the World it self could subsist. For this also obeyeth GOD; and the Seas and Earth are subject to Him, and the Life of Man is disposed of by the Commands of the Supreme Law. ibid.

Whosoever thinketh that the admirable Order, and incredible Constancy of the Heavenly Bodies, and their Motions, whereupon the Preservation and Welfare of all things doth depend, is not govern'd by Mind and Understanding, he himself is to be accounted void thereof. ------- Shall we, when we see an artificial Engine, as a Sphere, or Dial, or the like, at first Sight acknowledge *Idem ap. Ray*, of the Creation, p. 67, 68.

that it is a Work of Reaſon and Art? And can one, when we ſee the Force of the Heavens, mov'd and carried about with admirable Celerity, moſt conſtantly finiſhing its annual Revolutions, to the eminent Welfare and Preſervation of all things, doubt at all that theſe things are perform'd not only by Reaſon, but by a certain excellent and divine Reaſon?

Idem ap. Ray, of the Creation, p. 221, 222.

We might add many Reaſons to this of the Providence, and Diligence, and Sagaciouſneſs of Nature on our Account; whereby we may be ſatisfied how great and eminent Bleſſings are beſtowed on Man by GOD; who at firſt raiſed them from the Ground, and ſet them in an erect and upright Poſture, that by viewing the Heavens they might attain to the Knowledge of the Gods. For Men are elevated from the Earth, not like Inhabitants, but like Spectators of Heavenly things; the Conſideration of which belongs to no other Sort of Animals.

Idem ap. Derham; *Aſtrotheol.* p. 4, 5.

What can be ſo plain and clear as when we behold the Heavens, and view the Heavenly Bodies, that we ſhould conclude there is ſome Deity of a moſt excellent Mind by which theſe things are govern'd? ---a preſent and an Almighty God, which he that doubts of, I do not underſtand why he ſhould not as well doubt whether there be a Sun or no. --- Time wears out the Figments of Opinions, but confirms the Judgments of Nature; for which Reaſon both among our ſelves, and in other Nations, the Veneration of the Gods, and the Sacredneſs of Religion, augment and improve every Day more and more.

ibid. *Idem*, p. 60, 61.

If thou ſhould'ſt ſee a large and fair Houſe, thou could'ſt not be brought to imagine that Houſe was built by the Mice and Weezles; altho' thou ſhould'ſt

should'st not see the Master thereof. So would'st thou not think thy self very plainly to play the Fool, if thou should'st imagine so orderly a Frame of the World, so great a Variety and Beauty of Heavenly Things, so prodigious a Quantity and Magnitude of Sea and Land, to be thy House, thy Workmanship, and not that of the Immortal Gods?

The fourth Cause, and that even the chief, is the Equality of the Motion and Revolution of the Heavens; the Distinction, Unity, Beauty, and Order of the Sun, Moon, and all the Stars; the bare View alone of which Things is sufficient to demonstrate them to be no Works of Chance. As if any one should come into an House, the *Gymnasium*, or *Forum*, when he should see the Order, Manner, and Management of every Thing, he could never judge these Things to be done without an Efficient; but must imagine there was some Being presiding over them, and whose Orders they obeyed. Much more in so great Motions, such Vicissitudes, and the Orders of so many and great Things: —— A Man cannot but conclude that such great Acts of Nature are governed by some Mind. *Idem*, ibid. p. 105, 106.

So the Philosophers ought to have done, if haply they had any Doubts at the first View of the World; afterwards, when they should behold its Determinate and Equal Motions, and all Things managed by established Orders, and with immutable Constancy, they ought then to understand, that there is not only some Inhabitant in this Heavenly, this Divine House; but also some Ruler and Moderator, and in a manner Architect of so great a Work, so noble a Performance. *Idem*, ibid. p. 72.

Idem, ibid. p. 212, 213. It was the Opinion of *Ariſtotle*, that if there were ſuch a Sort of People that had always lived under the Earth, in good and ſplendid Habitations, adorned with Imagery and Pictures, and furniſhed with all Things that thoſe accounted happy abound with; and ſuppoſing that theſe People had never at any Time gone out upon the Earth, but only by Report had heard there was ſuch a Thing as the Deity, and a Power of the Gods; and that at a certain Time afterwards the Earth ſhould open, and this People get out from their hidden Manſions into the Places we inhabit, when on the ſudden they ſhould ſee the Earth, the Seas, and the Heavens; perceive the Magnitude of the Clouds, and the Force of the Winds; behold the Sun, and its Grandeur, and Beauty, and know its Power in making the Day, by diffuſing its Light through the whole Heavens; and when the Night had overſpread the Earth with Darkneſs, they ſhould diſcern the whole Heavens beſpread and adorned with Stars, and ſee the Variety of the Moon's Phaſes, in her Increaſe and Decreaſe, together with her Riſings and Settings, and the ſtated and immutable Courſes of all theſe throughout all Eternity; this People, when they ſhould ſee all theſe Things, would infallibly imagine that there are Gods, and that thoſe grand Works were the Works of the Gods.

Cudw. p. 439. *Varro.*] Theſe alone ſeem to *Varro* to have underſtood what GOD is, who believed him to be a Soul, governing the whole World, by Motion and Reaſon.

Proæm. pag. 3, 5. *The Sybilline Oracles.*] O Mortal, Carnal, and Vile Men! How ſoon are you puft up? not conſidering that you muſt die. You don't tremble at,

at, and fear the Supreme GOD who governs you, who knows, ſees, and obſerves all Things; who is the Creator that preſerves all Things; who ſent his pleaſant Spirit into all Things; and made him the Governor of all Mankind. There is One GOD, who alone Reigns: He is very Great, Unbegotten, Omnipotent, Invifible. He alone ſees all Things, but cannot be ſeen by any Mortal; for what Fleſh can behold the Celeſtial, True, and Immortal GOD with his Eyes, who lives in Heaven? ſince Men who are born Mortals, of Bones, Fleſh, and Veins, cannot ſtedfaſtly behold the ſhining Beams of the Sun. Worſhip Him who is the Only Governor of the World; who alone is from Everlaſting to Everlaſting: He exiſts from himſelf, is Unbegotten; He Governs all Things at all Times, and He hath ordained a Judgment for all Men in one common Day.---Behold, He is manifeſt to all, and is no Deceiver. Come therefore, and do not purſue this dark and tempeſtuous way of [Idolatry and Polytheiſm] any longer. Behold the pleaſant Light of the Sun ſhines glorioufly. Know, and wiſely conſider it, there is One GOD, who gives Rain, and Winds; He cauſes Earthquakes, Thunders, Famines, Plagues, Snow, Ice, and ſuch grievous Calamities. But why do I reckon up every Particular? He commands in Heaven, and governs in the Earth, and really exiſts. ----- p. 5.

There is One only Supreme GOD, who hath created Heaven, the Sun, Moon, and Stars, and the fruitful Earth, and the ſwelling Waves of the Sea, the Mountains full of Woods, and the eternal Streams of the Fountains. He produceth an innumerable Quantity of Fiſh in the Waters; and He nouriſheth the creeping Creatures p. 5, 7.

with a cool Diet: And He gives to the ſwift Birds of various Kinds, harſh and pleaſant Notes, and to cut the Air with their noiſy Wings; and He hath put the wild Beaſts in the Hills, covered with Wood; and hath ſubjected all Beaſts to Mankind: But hath made Man His peculiar Workmanſhip, the Governor of all Things; and hath ſubjected to him many various Creatures which he cannot comprehend: For what mortal Man can know all Things? But He only knows them who made them in the Beginning; who is the incorruptible and eternal Creator, living in Heaven; who gives to all Good Men a very great Reward; but is angry with the Unjuſt, and Wicked, and puniſhes them by Wars, Plagues, and extraordinary Calamities.

Cudw. p. 251. *Diodorus Siculus*, of the old *Chaldeans*.] The *Chaldeans* affirm the Nature of the World to be eternal; and that it was neither generated from any Beginning, nor will ever admit Corruption. They believe alſo, that the Order and Diſpoſition of the World, is by a certain Divine Providence; and that every one of thoſe Things which come to paſs in the Heavens, happens not by Chance, but by a certain determinate and firmly ratified Judgment of the Gods.

Ovid.] Of the Creation, ſee the Beginning of his *Metamorphoſes* at large. Other Paſſages out of *Plautus*, *Virgil*, *Horace*, and the reſt of the Poets are common, but here omitted for the Sake of Brevity, and to leave Room for other Teſtimonies.

P. 247. *Strabo.*] *Strabo* affirms that the World was the joint Work of Nature and Providence; — which Providence, having a manifold Fecundity in it, and delighting in Variety of Works, it deſigned

deſigned principally to make Animals, as the moſt excellent Things; and among them chiefly thoſe Two nobleſt kinds of Animals, Gods, and Men; for whoſe Sakes the other Things were made; and then aſſigned Heaven to the Gods, and Earth to Men, the two extreme Parts of the World, for their reſpective Habitations.

Strabo teſtifies of the ancient *Indian Brachmans*, that in many Things they philoſophiz'd after the *Grecian* Manner; as when they affirm, that the World had a Beginning, and that it would be corrupted, and that the Maker and Governor thereof pervades the whole of it. p. 504.

Seneca.] GOD, when He laid the Foundation of this moſt beautiful Fabrick, and began to erect that Structure, than which Nature knows nothing greater or more excellent; to the End that all Things might be carried on under their reſpective Governors orderly, though he intended himſelf through the whole, as to preſide in chief over all; yet did He *generate Gods* alſo, as ſubordinate Miniſters of His Kingdom under Him. p. 247.

Seneca calls GOD, the Framer and Former of the Univerſe: The Governor, Diſpoſer, and Keeper thereof; Him upon whom all Things depend: The Mind and Spirit of the World: The Artificer and Lord of this whole mundane Fabrick: To whom every Name belongs: From whom all Things ſpring: By whoſe Spirit we live: Who is in all His Parts, and ſuſtaineth Himſelf by His own Force: By whoſe Counſel the World is provided for, and carried on in its Courſe, conſtantly and uninterruptedly: By whoſe Decree all Things are done: The Divine Spirit that is diffus'd through all Things, both great and ſmall, in an equal Degree: The GOD p. 440.

whoſe Power extends to all Things: The Greateſt and moſt Powerful GOD, who doth Himſelf ſupport and uphold all Things: Who is preſent every where to all Things: The GOD of Heaven, and of all the Gods; upon whom are ſuſpended all thoſe other Divine Powers which we ſingly worſhip and adore.

Mr. *Derham's* Aſtrotheol. p. 217. ex Epiſt. 117.

Seneca inſtanceth in two Things that have the Conſent of Mankind for them; the Immortality of the Soul; and the Exiſtence of the Deity: Which, ſaith he, among other Arguments, we collect from the innate Opinion which all Men have of the Gods. For there is no Nation in the World ſo void of Law and Morality, as not to believe but there are ſome Gods.----They lie, that ſay they believe there is no GOD: For atho' by Day they may affirm ſo to thee, yet by Night they are to themſelves conſcious of the contrary.

Quare bonis Viris, &c. C 1. ib. p. 217, 218.

Seneca takes it for granted, that there is ſuch a Thing as a Divine Power and Providence, governing the World; and he ſaith, It was needleſs for him to ſhew that ſo great a Work [as the World] could not ſtand without ſome Ruler; that ſo regular Motions of the Stars could not be the Effects of a fortuitous Force; and that the Impulſes of Chance muſt be oftentimes diſturb'd and juſtle; that this undiſturbed Velocity, which bears the Weight of ſo many Things in the Earth, and Seas, with ſo great a Number of Heavenly Lights, both very illuſtrious and alſo ſhining, according to a manifeſt Regularity, muſt needs proceed by the Direction of ſome Eternal Law: That this can never be the Order of ſtraggling Matter; neither is it poſſible for Things fortuitouſly and raſhly combin'd to depend upon, and manifeſt ſo much Art. *Quintilian.*]

Quintilian.] GOD is a Spirit, mingled with, and diffus'd through all the Parts of the World. p. 440, 504.

Plutarch.] It is better for us to follow *Plato*, and loudly to declare that the World was made by GOD. For as the World is the beſt of Works, ſo is GOD the beſt of all Cauſes. Nevertheleſs, the Subſtance or Matter out of which the World was made, was not it ſelf made, but always ready at hand, and ſubject to the Artificer, to be ordered and diſpoſed by Him. For the making of the World was not the Production of it out of nothing, but out of an antecedent, bad and diſorderly State; like the making of an Houſe, Garment, or Statue. p. 197.

GOD ſeems to excel in theſe three Things; Incorruptibility, Power, and Virtue: Of all which the moſt divine and venerable is Virtue. For *Vacuum*, and the ſenſeleſs Elements have Incorruptibility: Earthquakes and Thunder, Bluſtring Winds, and over-flowing Torrents, much of Power and Force: Wherefore the Vulgar being affected three Manner of ways towards the Deity, ſo as to Admire its Happineſs; to Fear it; and to Honour it; they Eſteem the Deity Happy, for its Incorruptibility: They Fear it, and ſtand in Awe of it for its Power; but they Worſhip it, that is, Love and Honour it, for its Juſtice. p. 203.

Whereas there are two Cauſes of all Generation, (the Divine and the Natural,) the moſt Ancient Theologers and Poets attended only to the more excellent of theſe two, (the Divine Cauſe;) reſolving all Things into GOD, and pronouncing this of them univerſally, That Jove *was both the Beginning, and Middle, and that all Things were out of* Jove; [as the *Orphick* Verſe has it.] p. 305.

Inſomuch

Inſomuch that theſe had no regard at all to the other natural and neceſſary Cauſes of Things. But on the contrary, their Juniors, who were called Naturaliſts, ſtraying from this moſt excellent and divine Principle, placed all in Bodies, their Affections, Colliſions, Mutations, and Mixtures together.

p. 423, 424. Neither is it at all conſiderable what the Stoicks here object againſt a Plurality of Worlds; they demanding how there could be but one Fate, and one Providence, and one *Jove*, (or independent Deity,) were there many Worlds? For what Neceſſity is there that there muſt be more *Joves* than one, if there were more Worlds? And why might not that One and the ſame GOD of the Univerſe, call'd by us the Lord and Father of all, be the firſt Prince, and Higheſt Governor in all thoſe Worlds? Or what hinders but that a Multitude of Worlds might be all ſubject to the Fate and Providence of one *Jove*, or Supreme GOD? Himſelf inſpecting and ordering them every one, and imparting Principles and Spermatick Influences to them, according to which all Things in them might be governed and diſpoſed. For can many diſtinct Perſons in an Army, or *Chorus*, be reduc'd into one Body or Polity, and could not ten, or fifty, or a hundred Worlds in the Univerſe be all govern'd by One Reaſon, and be ordered together in reference to One Principle. [*See Page* 459.

Plut. de placit. Phil. l. 6. Men began to acknowledge a GOD, when they ſaw the Stars maintain ſo great an Harmony, and the Days and Nights, both in Summer, and Winter, to obſerve their ſtated Riſings and Settings.

Dion

Dion Chryſoſtom.] The whole World is under a Kingly Power, or Monarchy. ---- The Supreme GOD is the common King of Gods and Men, their Governor and Father: The GOD that rules over all: The First and Greateſt GOD: The chief Preſident over all Things; who orders and guides the whole Heaven and World, as a wiſe Pilot doth a Ship: The Ruler of the whole Heaven, and Lord of the whole Subſtance of Things. ---- Concerning the Nature of the Gods in general, but eſpecially of that Supreme Ruler over all, there is an Opinion in all Human Kind, as well *Barbarians* as *Greeks*, that is naturally implanted in them, as rational Beings, and not deriv'd from any Moral Teacher. Cudw. p. 443, 444.

Galen.] Should I any longer inſiſt upon ſuch Brutiſh Perſons as thoſe, the Wiſe and Sober might juſtly condemn me, as defiling this Holy Oration, which I compoſe as a true Hymn to the Praiſe of Him that Made us; I conceiving true Piety and Religion towards GOD to conſiſt in this, not that I ſhould ſacrifice many *Hecatombs*, or burn much Incenſe to Him; but that I ſhould my ſelf firſt acknowledge, and then declare to others, how great His Wiſdom is, how great His Power, and how great His Goodneſs. For that He would adorn the whole World after this Manner, envying to nothing that Good which it was capable of, I conclude to be a Demonſtration of moſt abſolute Goodneſs: And thus let Him be Praiſed by us as Good. And that He was able to find out how all Things might be adorn'd after the beſt Manner, is a Sign of the greateſt Wiſdom in Him. p. 444.

And

And, laſtly, to be able to effect and bring to paſs all thoſe Things which he had thus decreed, argues an inſuperable Power. [*See much more to this Purpoſe, in his admirable Book,* De Uſu Partium.]

p. 445. *Maximus Tyrius.*] I will now more plainly declare my Senſe by this Similitude: Imagine in your Mind a great and powerful Kingdom or Principality, in which all the reſt freely and with one Conſent conſpire to direct their Actions agreeable to the Will and Command of One Supreme King, the Oldeſt and the Beſt: And then ſuppoſe the Bounds and Limits of this Empire not to be the River *Halys*, nor the *Helleſpont*, nor the Lake of *Mæotis*, nor the Shores of the Ocean; but Heaven above, and the Earth beneath. Here then let that great King ſit Immoveable, preſcribing Laws to all His Subjects; in which conſiſts their Safety and Security: The Conſorts of his Empire being many, both viſible and inviſible Gods: Some of which, that are neareſt to him, and immediately attending on Him, are in the higheſt Royal Dignity, feaſting, as it were, at the ſame Table with Him. Others again are their Miniſters and Attendants; and a third Sort Inferior to them both. And thus you ſee how the Order and Chain of this Government deſcends down by Steps and Degrees from the Supreme GOD, to the Earth and Men.

p. 517. The End of your Journey is not the Heaven, nor thoſe ſhining Bodies in the Heaven; for tho' thoſe be beautiful, and divine, and the genuine Off-ſpring of the Supreme Deity,

ty, framed after the beſt Manner; yet ought all theſe to be tranſcended by you, and your Heart lifted up far above the ſtarry Heavens, [to the Father and Maker of all Things.]

Macrobius.] The whole World is well called *the Temple of GOD*, in way of Oppoſition to thoſe who think GOD to be nothing elſe but the Heaven it ſelf, and thoſe Celeſtial Things which we ſee. Wherefore *Cicero*, that he might ſhew the Omnipotence of the Firſt and Supreme GOD to be ſuch as could ſcarcely be underſtood, but not at all perceiv'd by Senſe; He calleth whatſoever falleth under Human Sight, *His Temple*; that ſo he that worſhippeth theſe Things, as the Temple of GOD, might in the mean time remember, that the chief Worſhip is due to the Maker and Creator of them. As alſo that himſelf ought to live in the World like His Prieſt; holily and religiouſly. p. 538, 539.

Jamblicus, of the old *Ægyptian* Theology.] They aſſert that GOD, who is the Cauſe of Generation, and of entire Nature, and of all the Powers in the Elements themſelves, is ſeparate, exempt, elevated above, and expanded over all the Powers and Elements in the World. For being above the World, and tranſcending the ſame, Immaterial, and Incorporeal, Above Nature, Unmade, Indiviſible, manifeſted wholly from Himſelf, and in Himſelf, He rules over all things; and in himſelf containeth all Things; and becauſe he virtually comprehends all Things, therefore does he impart and diſplay the ſame form Himſelf. p. 335, 336.

Minutius

Translated by Mr. Reeves.

Minutius Felix, in part from the old Philosophers.] § XVII. Nor do I deny, what *Cicero* has taken so much pains to prove, that Man must learn to know himself, and diligently examine his Nature, his Original, and the End of his Being; whether he was only a mere Concretion of the Elements, and thus admirably adjusted by blind Atoms; or made, and fashioned, and animated by God. But this we cannot apprehend without studying the World, and its Maker; for these Things are so closely connected and chain'd together, that you must diligently examine the Nature of God, before you can understand that of Man; nor can you ever be a good Citizen of this World, before this common City of us All, the World and You, are well acquainted; and certainly, since in this chiefly it is that we differ from Beasts, that whereas they are prone to Earth, and bent downward by Nature, and fram'd to look no farther than the good of their Bellies; yet Man is made erect and upright, and by that Make form'd for the Contemplation of Heaven, and has Language and Reason to conduct him to the Knowledge and Imitation of God; for a Creature so constituted to be ignorant of his Maker, to wink as hard as he can, that he may not see that Glorious Being that is thrusting in at his Eyes, and knocking for Admittance at all his Senses, is the most inexcusable Ignorance imaginable. For 'tis most abominable Sacrilege to be Poring upon Earth, for that which you are only to find in Heaven. For which reason I can hardly think that such Men have the use of their Soul or Senses, no not of their very Eyes, who cannot see this glorious Machine of the Universe to be the Work of

vine Wiſdom, but dream that 'twas jumbled together by a fortuitous Concourſe of Atoms. For what is ſo clear and undeniable, when you lift up your Eyes to Heaven, and when you look down upon all about you, than that there is a Deity of moſt excellent Underſtanding, that inſpires, moves, ſupports, and governs all Nature? Conſider the vaſt Expanſe of Heaven, and the Rapidity of its Motion, either when it is ſtudded with Stars by Night, or enlighten'd with the Sun by Day; then ſhall you ſee that Almighty Hand which poiſes them in their Orbs, and balances them in their Movements. Behold how the Sun girds up and regulates the Year by its Annual Circuit, and how the Moon meaſures round a Month by its Increaſe, Decay, and total Diſappearance. What need I mention the conſtant Viciſſitudes of Light and Darkneſs, for the alternate Reparation of Reſt and Labour? I muſt leave it to Aſtrologers to tell you more at large the Uſes of the Stars, either how they direct the Pilot in Navigation, or the Husbandman in his Seaſons of Plowing and Reaping; every one of which Celeſtial Bodies, as they requir'd Almighty Power and Wiſdom at firſt to create and range them in their Stations, ſo do they require the moſt conſummate Wiſdom and Sagacity to comprehend them now they are created. Moreover, does not the ſtanding Variety of Seaſons marching in goodly Order teſtify the Divine Author? The Spring with her Flowers, the Summer with her Harveſts, and the Ripening Autumn with grateful Fruits, and the moiſt and unctuous Winter, are all equally neceſſary; which Order had certainly been diſturbed before now, had it not been rul'd by the wiſeſt

wiſeſt Power. What an Argument of a Providence is it, thus to interpoſe and moderate the Extremes of Winter and Summer, with the Allays of Spring and Autumn, that we paſs the Year about with Security and Comfort, between the exceſſes of Parching Heat and Cold? Obſerve the Sea, and you'll find it bounded with a Shore, a Law it cannot tranſgreſs; look into the vegetable World, and ſee how all the Trees draw their Life from the Bowels of the Earth; view the Ocean in conſtant Ebb and Flow, and the Fountains running in full Veins, and the Rivers perpetually gliding in their wonted Channels. What need I ſpend more Words to ſhew, how providentially this Spot of Earth is canton'd out into Hills, and Dales, and Plains? What need I ſpeak of the various Artillery for the Defence of every Animal? Some arm'd with Horns, or hedg'd about with Teeth, or fortify'd with Hoofs and Claws, or ſpear'd with Stings; and others either ſwift of Foot, or Wing? But above all, the beautiful Structure of Man moſt plainly ſpeaks a God; Man of Stature ſtraight, and Viſage erect, with Eyes at top like Centries, watching over the other Senſes within the Tower.

XVIII. But I ſhou'd never come to an end, was I to travel through Particulars; there is not any one Part in Man, but is either neceſſary or ornamental. And what is ſtill more miraculous, is to find a general Reſemblance in all, and diſtinguiſhing Features in each; ſo that the whole Species is alike, and yet not one Individual without ſome diſcrimmating Character. What think you of the manner of our Birth, and the Inſtinct of Generation? Who but God cou'd

cou'd turn the Courſe of Nature againſt ſuch a Time, to fill the Breaſts with Milk for the ripening *Embryo*, and ſuckle the tender Infant with that Plenty of lacteal Dew? Nor does God provide only for Univerſals, but takes care alſo of Particulars. *Britain* is made amends with the warm Vapours of the circumambient Sea for its deficiency of Sun. *Nile* ſerves *Egypt* for Rain. *Euphrates* cultivates *Meſopotamia*; and *Indus* is ſaid both to water and ſow the *Eaſt with the Seeds it diſcharges into it.* Shou'd you chance to go into a Houſe, and ſee all the Rooms exquiſitely furniſh'd, and kept in great order, you wou'd make no diſpute but ſuch a Houſe was under the Care and Inſpection of a Maſter, and that he himſelf was preferable to all the Furniture. Thus in this Palace of the World, when you caſt your Eyes upon Heaven and Earth, and behold the admirable Order and Oeconomy of Things, you have as little reaſon to queſtion whether there is a Lord of the Univerſe, and that he himſelf is more glorious than the Stars, and more to be admir'd than the Works of his own Hands. But perhaps you may have no Scruples concerning a Providence, but only whether the Heavenly Government is lodg'd in One, or a Plurality of Deities. And this is eaſily decided, if you'll give your ſelf but the Trouble to look abroad into the Kingdoms of the World, from which you may collect the Regimen or Form above. For when did you ever know any Copartnerſhip in a Kingdom commence with Integrity, or conclude without Blood? Not to mention the Grandees of *Perſia*, who conſulted the Neighing of a Horſe in the Election of Kings, nor to revive

the old Story of the *Theban Pair* dead and gone; the fatal Diſſention of the *Roman Brathers* for a Kingdom of Shepherds, and Shepherds Sheds, is famous all the World over. The Wars of *Father* and *Son-in-Law*, *Caſar* and *Pompey*, ſhook the Earth; and all the *Roman* Empire was not big enough to hold Two Men. See Examples of another kind; the Bees have but one King, and the Flocks and Herds but one Leader; and can you imagine Two Supremes in Heaven, and that Almighty Power is diviſible? Since 'tis manifeſt, that God, the Univerſal Parent, has neither Beginning nor End; but gave Beginning to All, and Eternity to himſelf; who before the World was, was a World to himſelf; who commands all Things by his *Word*, and diſpenſes them by his Wiſdom, and conſummates them by his Power. This God is Inviſible, becauſe of his Brightneſs inacceſſible; and not tangible, becauſe Incorporeal; and Incomprehenſible, becauſe too great for our Capacity; Infinite, Immenſe, and this Immenſity intelligible by himſelf only. Our Intellect is too narrow to contain him, and therefore we never conceive ſo worthily of him, as when we conceive him Unconceivable. Shall I ſpeak my Senſe of this Matter? Whoever imagines that he knows the Divine Majeſty, leſſens it; and whoever does not leſſen it, can never pretend to know it. Enquire not his Name, for God is his Name, and there only we uſe Names, where many Individuals are to be diſtinguiſh'd by their proper Appellations; but to God, who is but One, the Name of God is all in all; for if I call him Father, you forthwith conceive of him, as an Earthly Parent; if

King

King or Lord, your Fancy cloths him with ſuch Ideas as thoſe Words ſtand for with Men. Take but away this human Covering of Words, and you'll ſee the Divine Nature the better. Moreover, have I not all the World on my Side in the Acknowledgment of this One God? I hear the People when they lift up their Hands to Heaven, ſay nothing elſe, but *The God, The great God, The true God*, and *if it ſhall pleaſe God*. This Expreſſion in the Vulgar, is the Voice of Nature; and is it not alſo the Confeſſion of Chriſtians? And they who make *Jove* the Supreme Deity, miſtake indeed in the Name, but agree in the Thing, in the Notion of One Almighty.

XIX. I find the Poets likewiſe ſinging of one Sovereign Deity, *Father of Gods and Men*, and who faſhion'd our Souls according to his own Will and Pleaſure. What ſays *Virgil* of *Mantua*? Does not he yet ſpeak more plain, and neareſt to Truth? *In the Beginning* (ſays he) *a Spirit quicken'd Heaven and Earth*, and all the Parts of the Univerſe, and *a Mind infus'd actuated the whole Maſs, the Author of Men and Beaſts*, and every Animal. The ſame Poet in another place calls this Mind and Spirit, God; his Words are theſe,

- - - - Deum namque ire per omnes
Terraſq; tractuſq; maris, cœlumq; profundum;
Unde homines & pecudes, unde imber & ignes.

Earth, Heaven, Sea, all Natures vaſt Abyſs
Does God pervade and fill.
Hence Man, and Beaſt; Storm, and red Lightning hence.

And what other God do we Chriſtians preach up, than Mind, and Reaſon, and Spirit? Let us run over the Doctrine of the Philoſophers, if you pleaſe, and you'll find them, though differently expreſſing themſelves in Words, yet as to the Thing, all conſpiring in one and the ſame Opinion. I omit the ancient Wiſe Men of *Greece*, deſervedly ſo call'd upon the account of their Sayings. Let *Thales* the *Mileſian*, the Principal of them, ſerve for the reſt, who was the firſt that diſcours'd accurately concerning Heavenly Matters. This ſame *Mileſian Thales* affirm'd Water to be the Principle of Things; but withal, that God was that Mind which form'd every Being out of this Fluid into a World. But let me tell you, this Account of Water and the Spirit was a Notion far above the reach of any Mortal, had not God, who was that Spirit, reveal'd it to *Moſes*. Thus you ſee how the principal Philoſopher exactly concurs with us Chriſtians. After him *Anaximenes*, and then *Diogenes* ſirnamed *Apolloniates*, make God of a Nature Aerial, Infinite, and Immenſe. Theſe then agree with us in the Doctrine of One God. The God of *Anaxagoras*, is an Infinite Mind that diſpoſes and puts every Thing in Motion; and the God of *Pythagoras*, is a Mind that permeates and takes care of the Univerſe, and is the Original of all Life. *Xenophanes* is well known to have defin'd God to be an Animated Infinite. *Antiſthenes* holds a Plurality of Gods over ſeveral Nations, but one only Deity Supreme by Nature. *Speuſippus* is for that natural, animal Virtue, by which All things are conducted, to be God. Does not *Democritus*, although

Gen. i. 2.

although the first Inventor of the Atomick Philosophy, does not he often speak of that Nature, which is the Author of those Images and Intentional Species, by which we understand, and feel, and see, &c. as God? *Strato* likewise sets up Nature for God. Even your famous *Epicurus*, who makes either Unactive, or No Gods, Deifies Nature. *Aristotle* is at Variance with himself: however he assigns one Sovereign Power; for one while he calls Mind God, another while the World he will have God, and then again he makes God above the World. *Heraclides* of *Pontus* reels about in the same manner; however, he ascribes a Divine Mind to God, or else to the World, or else makes a pure Divine Mind it self to be God. *Theophrastus*, and *Zeno*, and *Chrysippus*, and *Cleanthes*, though all at Difference, yet at the long run they all meet in the Notion of one Providence that superintends the World. For *Cleanthes* sometimes makes God to be a Mind, sometimes a Soul, sometimes *Æther*, and sometimes Reason. His Master *Zeno* makes the Natural and Divine Law in Things to be God; and sometimes *Æther*, and sometimes Reason, to be the Fountain of all. This same Philosopher, methinks, by calling *Juno* Air, *Jupiter* Heaven, *Neptune* Sea, *Vulcan* Fire, and all the rest likewise of the Popular Gods, Elements, by such Names severely confutes, and lashes the Publick Vanity of worshipping such Deities. *Chrysippus* says much the same Things; for he believes God sometimes to be a Divine Energy, a Rational Nature; and then again the World, and then fatal Necessity; and copies after *Zeno* by interpreting the Fables

of the Gods in the Verſes of *Heſiod*, *Homer* and *Orpheus*, into Natural Principles. And *Diogenes* the *Babylonian*, expounds the lying-in of *Jove*, and the Birth of *Minerva*, and ſuch like Fictions, not of the Gods, but of Nature. *Xenophon*, the Diſciple of *Socrates*, affirms the Form of the true God to be Invifible, and therefore not to be ſearch'd after. *Ariſto* of *Chios* affirms him likewiſe to be Incomprehenſible; and both the one and the other underſtood the Divine Majeſty beſt, by deſpairing to underſtand it. But of all the Philoſophers, *Plato* deliver'd himſelf the plaineſt and trueſt of God, of Things, and Names; and his Diſcourſes had been purely Divine, had he not ſometimes comply'd too fat with the Vanities of the Age, and allay'd them with the Errors in Faſhion. This ſame *Plato* therefore in his *Timæus* ſays, That by the Name *God*, we are to underſtand the Parent of the World, the Architect of the Soul, and the Maker of Heaven and Earth; whom it is hard to underſtand by reaſon of his incredible Immenſity of Power, which is too much for Human Intellect; and when we do come to the Knowledge of Him, 'tis impoſſible to make our Notions intelligible to All. And we Chriſtians almoſt ſay the ſame Things; for we are come to the Knowledge of this true God, and we alſo call him the Parent of all Things; nor do we preach theſe Divine Myſteries in Publick, but when the Publick calls us in Queſtion about our Religion.

XX. I have now run over the Opinions almoſt of all the Philoſophers, thoſe of Note eſpecially, whereby 'tis evident, they all declare

clare for one God, though under different Denominations; insomuch, that ev'ry one must conclude, either that the Christians now are Philosophers, or that the Philosophers of old were Christians.

Lord Bacon.] I had rather believe all the Fables in the *Legend*, and the *Talmud*, and the *Alcoran*, than that this Universal Frame is without a Mind. And therefore God never wrought a Miracle to convince *Atheism*, because his ordinary Works convince it. It is true, that a little Philosophy inclineth Man's Mind to *Atheism*, but Depth in Philosophy bringeth Mens Minds about to *Religion*. For while the Mind of Man looketh upon Second Causes scattered, it may sometimes rest in them, and go no further: But when it beholdeth the Chain of them Confederate and Linked together, it must needs fly to *Providence* and *Deity*. *Essay on Atheism.*

Mr. *Boyle.*] The Power and Wisdom of God display themselves by what he does, in reference both to his Corporeal and his Incorporeal Creatures. Among the manifold Effects of the *Divine Power*, my intended Brevity will allow me to mention only Two or Three, which tho' to discerning Eyes they be very manifest, are not wont to be very attentively reflected on. The *Immense Quantity* of Corporeal Substance, that the Divine Power provided for the framing of the Universe; and the *Great Force* of the Local Motion that was imparted to it, and is *regulated* in it. And first, the *Vastness* of that huge Mass of Matter that this Corporeal World consists of, cannot but appear stupendious to those that skilfully contemplate it. That part of the Universe which has been already discovered by Human Eyes, assisted with Dioptrical Glasses, is almost *Of the Veneration Man's Intellect owes to God*, p. 10.

unconceivably vaſt, as will be eaſily granted, if we aſſent to what the beſt Aſtronomers, as well Modern as Ancient, ſcruple not to deliver. [See
p. 11. Pag. 56, 57. above,] And it plainly appears by the Parallaxes, and other Proofs, that this Globe of
p. 12. Earth and Water that we Inhabit, and often call the *World*, though it be divided into ſo many great Empires and Kingdoms, is ſo far from being for its Bulk a conſiderable part of the Univerſe; that, without much Hyperbole, we may ſay, that 'tis in Compariſon thereof, but a *Phyſical Point*. Nay, thoſe far greater Globes of the Sun, and other fixed Stars, and all the ſolid Maſſes of the World to boot, if they were reduc'd into One, would perhaps bear a leſs Proportion to the Fluid [empty] part of the Uni-
p. 13. verſe, than a *Nut* to the *Ocean*. Which brings into my Mind the Sentence of an excellent modern Aſtronomer, That the Stars of the Sky, if they were crouded into One Body, and placed where the Earth is, would, if that Globe were placed at a fit Diſtance, appear no bigger than a Star of the firſt Magnitude now does. And after all this, I muſt remind you, that I have been hitherto ſpeaking but of that part of the Corporeal Univerſe that has been already ſeen by us. And therefore I muſt add, that as vaſt as this is, yet all that the Eye, even when powerfully promoted by proſpective Tubes, hath diſcovered to us, is far from repreſenting the World of ſo great an Extent, as I doubt not but more
p. 14. perfect Teleſcopes hereafter will do. ---From the vaſt *Extent* of the Univerſe, I now proceed to conſider, the ſtupendious *Quantity of Local Motion*, that the Divine Power has given the Parts of it, and continually maintains in it.

[See

[See Pag. 53, 54. *prius.*] ---These Things are mention'd, that we may have the more enlarg'd Conceptions of the *Power*, as well as *Wisdom* of the Great Creator, who has put so wonderful a Quantity of Motion into the Universal Matter, and maintains it therein; and is able not only to set Bounds to the raging Sea, and effectually say to it, *Hitherto shalt thou come, and no farther; and here shall thy proud Waves be stayed*: But (what is far more) so [by the Power of Gravity] to curb and moderate those stupendiously rapid Motions of the Mundane Globes, and *intercurrent Fluids*, [rather, *in the interpers'd Vacuities*] that neither the Unweildiness of their Bulk, nor Celerity of their Motions have made them exorbitate, or fly out, and this for many Ages; during which, no Watch for a few Hours has gone so regularly. p. 21. Job xxxviii. 11.

---The Contrivance of every Animal, and especially of a Human Body, is so curious and exquisite, that 'tis almost impossible for any body that has not seen a Dissection well made, and Anatomically consider'd, to imagine or conceive how such excellent Workmanship is display'd in that *admirable Engine*. ---I shall here tell you in a word, (and 'tis no Hyperbole,) that as St. *Paul* said on another Occasion, *That the Foolish Things of God are wiser than Men; and the weak Things of God stronger than Men*: So we may say, that the meanest Living Creatures of God's making, are far more wisely contriv'd than the most excellent pieces of Workmanship that Human Heads and Hands can boast of. And no *Watch* nor *Clock* in the World is any way comparable for Exquisiteness of Mechanism to the Body of even an *Ass* or a *Frog*. p. 24. 1 Cor. i. 25. p. 25.

---We need not fly to Imaginary ultramundane p. 43.

Spaces,

Spaces to be convinc'd that the Effects of the *Power* and *Wisdom* of God are worthy of their Causes, and not near adequately understood by us; if, with sufficient Attention, we consider that *innumerable Multitude*, and *unspeakable Variety* of Bodies that make up this *vast Universe*. For there being among these a stupendious Number that may justly be look'd upon as so many distinct Engines, and many of them very complicated ones too, as containing sundry subordinate ones; to know that all these, as well as the rest of the Mundane Matter, are every Moment sustain'd, guided, and govern'd according to their respective Natures, and with an exact Regard to the Catholick Laws of the Universe; to know, I say, that there is a *Being* that doth this every-where, and every Moment, and that manages all Things without either Aberration or Intermission; is a Thing that, if we attentively reflect on, ought to produce in us, for that Supreme Being that can do this, the *highest Wonder*, and the *lowliest Adoration*. [*See the rest of that excellent Discourse.*]

Dioptricks. p. 195. Mr. *Molyneux.*] I should think it an Attempt worth the Thought of some profound Philosopher, to give an Account of those Admirable, Orderly, and Beautiful Appearances of Nature, whereof we can most plainly apprehend the *Designs*, and *final Causes*, but can hardly proceed to any further Knowledge of them. This surely might be able to convince the most obstinate Opposers of *Divinity*. For certainly, if we can rely upon *any Deduction*, or *Consequence* drawn out by the *Mind* of *Man*, we may assuredly rest satisfied in this, That so many *Phænomena*, stupendous and surprizing, for their *design'd*

Design'd Contrivance, could not proceed but from an *Omnipotent* and *Designing* Being.

And from hence may we justly fall into the deepest Admiration, that *one* and the *same* *Law* of Motion should be observed in Bodies so vastly distant from each other, and which seem to have no Dependance or Correspondence with each other. This does most evidently demonstrate, that they were all at first put into Motion by *one* and the *same unerring Hand*, even the *infinite Power* and *Wisdom* of God, who has *fix'd* this *Order* among them *all*, and has *established* a *Law*, which they cannot *transgress*. *Chance* or *dull Matter* could never produce such an *Harmonious Regularity* in the Motion of Bodies so vastly distant: This plainly shews a *Design* and *Intention* in the *first Mover*. And, with Submission to the Reverend and Learned *Divines*, I am apt to think that one Argument drawn from the *Order*, *Beauty* and *Design* of Things, is more forcible against *Atheism*, than Multitudes of Notional Proofs drawn from *Ideas*, Apparitions of *Spectres*, *Witches*, &c. (not that these should lose their due Strength) For besides the *Heavens*, even the *little Globe* we inhabit affords us infinite Variety in this Kind: And for my own part, I must confess, I can read more Divinity in Mr. *Charlton*'s admirable *Museum*, on a Box of beautiful *Shells*, of delicately Painted *Plants*, curiously adorned *Insects*, *Serpents*, *Birds*, or *Minerals*; than in large Volumes of Notional Writers. For *Animals*, *Plants*, and *Minerals*, do yield us abundant Instances, which visibly shew a *Design* or *End proposed*; which, as it cannot possibly consist with *Chance*, so neither p. 273, 274.

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can it be apprehended to have been ſo *ab æterno*: For 'tis abſolutely unconceivable, that a Thing *deſigned* for ſome *End* or *Purpoſe*, ſhould not be ſo *deſigned* in *Time*, by ſome *deſigning Being*.

Optic. Ed. Lat. p. 314, 315.

Sir *Iſaac Newton*.] It is the Principal Thing that Natural Philoſophy ought to do, and the End of that Science, that by a Chain of Reaſoning, we proceed from Effects to their Cauſes, until we arrive at the very *Firſt Cauſe* it ſelf. That we do not only explain the Mechaniſm of the World; but that beſides this, and as the Fruit of our Enquiries about it, we anſwer theſe following *Queries*, with others of a like Nature; What there is in the Celeſtial Spaces void of Matter? And whence it is that the Sun and Planets gravitate mutually towards one another, while the Spaces between are void of Matter? How it comes to paſs that Nature acts nothing in vain? And whence proceeds the admirable Beauty of the Univerſe? To what End the Comets were made? And whence it is that they move in Orbits ſo very Eccentrical, from and to all Parts of the Heavens? whereas the Courſe of the Planets hath the ſame Direction, towards the ſame Parts, in Orbits Concentrical? And what hinders the Sun and fixed Stars from ruſhing mutually upon one another? How it comes about that the Bodies of Animals are fram'd with ſuch exquiſite Art and Wiſdom? And for what Purpoſes their different Parts were fitted? Whether it were poſſible that the Eye could be framed without the Knowledge of Opticks? Or the Ear without the Knowledge of Sounds? Whence it is that the Motions of the Body obey the command of the Will? And whence

whence is what we call *Inſtinct* in Animals? Whether the Senſory of Animals be not the Place where the Subſtance which has Senſation is preſent, and into which the ſenſible Species of Objects are carried by the Nerves and the Brain, that they may there be perceived where they are actually preſent by that Subſtance there preſent? And whether from a right Solution of theſe Queries, it does not appear that there is a Being, Incorporeal, Living, Intelligent, Omnipreſent, who in infinite Space, as it were in his Senſory, ſees accurately and intimately, and diſcerns throughly the Things themſelves; and by being preſent to them comprehends them all within himſelf: Of which Things, that which in us Perceives and Thinks, Perceives and Beholds in its little Senſory, only the Images, brought to it by the Organs of Senſe?

This moſt excellently contrived Syſtem of the Sun, and Planets, and Comets, could not have its Origin from any other than from the wiſe Conduct and Dominion of an *Intelligent* and Powerful Being. And in caſe the Fixed Stars be the Centers of the like Syſtems, they that are framed by the like wiſe Conduct, muſt all be ſubject to the Dominion of *One Being*; eſpecially while it appears that the Light of the Fixed Stars is of the ſame Nature with the Light of the Sun; and that all theſe Syſtems do mutually impart their Light to one another. *Philoſ. Natural. Princip. Math. 2 Edit. Scholium Generale*, p. 482, 483.

This Being governs all Things; not as a Mundane Soul, but as the Lord of all Creatures; who on account of his Dominion over them, is uſually ſtiled the *Lord God*, παντοκράτωρ, or *Supreme Governor of the Univerſe*. For the Word *God* is relative, and hath Relation to ſubordinate Beings:

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And the Word *Deity* imports the Exerciſe of that Dominion, not over his own Body, (as is the Opinion of thoſe that make him the Soul of the World) but over thoſe ſubordinate Beings. The *Supreme God* is an Eternal, Infinite, and Abſolutely Perfect Being: But a Being that is never ſo Perfect, is not a *Lord God* without Dominion. For we ſay, *My God, Your God, the God of* Iſrael: But we don't ſay, *My Eternal, Your Eternal, The Eternal of* Iſrael: We don't ſay, *My Infinite, Your Infinite, The Infinite of* Iſrael: We don't ſay, *My Perfect, Your Perfect, The Perfect of* Iſrael: Theſe Denominations of him having no Relation to ſubordinate Beings. The Word *God* moſt frequently ſignifies *Lord*; but ſo that every Lord is not a God. The Exerciſe of Dominion in a Spiritual Being, conſtitutes a God: If that Dominion be Real, that Being is a Real God; if it be Supreme, the Supreme God; if it be fictitious, a falſe God. And the Conſequence of the Exerciſe of real Dominion, by the true God, is this, That He is a Living, Intelligent, and Powerful Being; as it is the Conſequence of the reſt of his Perfections, that he is the Higheſt or moſt perfect Being. He is *Eternal*, and *Infinite*, and *Omnipotent*, and *Omniſcient:* That is, he endures from Everlaſting to Everlaſting, and is preſent from Infinity to Infinity; He governs all Things, and knows all Things that are done, or can be known. He is not Eternity, or Infinity, but an Eternal, and an Infinite Being. He is not Duration, or Space, but he is a Being that Endures, and is Preſent: He endures always, and is preſent every where; and by exiſting always and every where, he conſtitutes Duration and Space, Eternity and Infinity. Since every Particle of Space exiſts *al-*

ways, and every indiviſible Moment of Duration exiſts, *every where*, 'tis evident the Framer and Lord of all Things cannot exiſt *never* or *no where*. He is Omnipreſent, not only by his *Power*, but alſo by his *Subſtance*: For Power cannot ſubſiſt without Subſtance. All Things are † contained and move in him, but without his Suffering thereby. God ſuffers nothing by the Motions of Bodies, nor do they feel any Reſiſtance by the Omnipreſence of God. 'Tis well known, that the Su-

† This was the Opinion of the Ancients: Aratus] *Let us begin with* Jove: *Let us Men never leave off diſcourſing of him: For every Concourſe of People, every Aſſembly of Mankind, the Seas alſo, and the Havens are all full of* Jove. *We all enjoy the Bleſſings of* Jove: *For we are alſo his Offſpring.* Phænom. at the Beginning. Paul] *That they ſhould ſeek the Lord, if haply they might feel after him, and find him; though he be not far from every one of us. For in him we live, and move, and have our Being; as certain alſo of your own Poets have ſaid, For we are alſo his Off-ſpring,* Acts xvi. 27, 28. Moſes.] *Know therefore this Day, and conſider it in thine Heart, That the Lord he is God, in Heaven above, and in the Earth beneath; there is none elſe,* Deut. iv. 39. *Behold the Heaven, and the Heaven of Heavens is the Lord's thy God; the Earth alſo, with all that therein is,* x. 14. David.] *Whither ſhall I go from thy Spirit? Or whither ſhall I flee from thy Preſence? If I aſcend up into Heaven, thou art there. If I make my Bed in Hell, behold thou art there.* Pſal. cxxxix. 7, 8. Solomon.] *Will God indeed dwell on the Earth? Behold the Heaven, and Heaven of Heavens cannot contain thee; how much leſs this Houſe that I have builded?* 1 King viii. 27. Job.] *Is not God in the Height of Heaven? And behold the Height of the Stars how high they are!* xxii. 12. Jeremiah the Prophet] *Am I a God at Hand, ſaith the Lord, and not a God afar off? Can any hide himſelf in ſecret Places, that I ſhall not ſee him, ſaith the Lord? Do not I fill Heaven and Earth, ſaith the Lord?* xxiii. 23, 24.

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preme God exiſts of Neceſſity; and by the ſame Neceſſity does he exiſt *always* and *every where*. Whence it is that he is entirely like himſelf, all Eye, all Ear, all Brain, all Arm, all Senſation, all Intelligence; all Action; but this in a way not at all like Men; in a way not at all like Bodies, in a way utterly unknown to us. As a Blind Man has no Idea of Colours, ſo have not we any Idea of the *Modus*, whereby God, moſt wiſe, perceives and underſtands all Things. He is entirely void of all Body and Bodily Figure; and therefore cannot be either ſeen, or heard, or felt; nor ought he to be worſhipp'd under any Bodily Shape. We have the Idea's of his Attributes, but do not at all know what the Subſtance of any Thing is. We ſee only the Figures and Colours of Bodies, we hear only their Sounds, we feel only their outward Surfaces, we ſmell only their Scents, and we taſte only their Savours; but we don't know their inmoſt Subſtances by any Senſation, or internal Reflection; and much leſs have we any Idea of the Subſtance of God. We Know him only by his Properties, and Attributes, and the moſt wiſe and excellent Structures of his Creatures, and by final Cauſes; while we Adore and Worſhip him on Account of his Dominion. For a God, without Dominion, Providence, and Final Cauſes, is nothing elſe but Fate and Nature. And thus much concerning God; To diſcourſe of whom, from the Appearances of Nature, does certainly belong to *Experimental Philoſophy*.

PART

PART IX.

A Recapitulation *of the Whole; With a ſerious* Addreſs *to All, eſpecially to the* Scepticks *and* Unbelievers *of our* Age.

AND now, Reader, whoſoever thou art, eſpecially if thou beeſt a Sceptick, or Unbeliever, either as to Natural or Revealed Religion, I beg of thee ſeriouſly to look back upon what has been hitherto Diſcourſed on the Behalf of them both; even from the certain Principles of Aſtronomy, or the true Syſtem of the World; and from thoſe numerous Teſtimonies of Sacred and Prophane Antiquity, which ſhew us the natural Conſequences of ſuch wonderful Phænomena. I ſay, look back *ſeriouſly* upon this View of the Univerſe before us, and its Conſequences. For if ever there was Occaſion for *Seriouſneſs*, it is here, where our *All* is at Stake; where our future, our final Weal, or Woe, Happineſs or Miſery,

are the Things under Examination. For accordingly, as we ſhall determine our ſelves in this grand Enquiry, concerning the Being and Providence of God, the Immortality of our Souls, and the Truth of Divine Revelation, as to the laſting Rewards and Puniſhments of another World; ſo ſhall we be oblig'd to behave our ſelves in our Conduct; upon which our Eternal State is to be awarded us at the great Day. For we cannot but be ſenſible that no Miſtake of our own can alter the Nature of Things; and that they are not the moſt zealous Wiſhes, and Inclinations; the moſt pungent Jeſts and Banter; the moſt Prophane and Impious Blaſphemy againſt God, his Attributes, or Providence, that can in the leaſt alter the Syſtem of the Univerſe, or baniſh the Supreme Creator and Governor, with his Providence and Laws, out of it. Let us conſider, then, that all the other Hypotheſes relating to the Conſtitution of the World, invented by either *Democritus*, *Epicurus*, *Ariſtotle*, *Ptolemy*, *Tycho*, *Cartes*, Mr. *Hobbs*, or *Spinoza*, do now plainly appear, from certain Evidence, to be not only falſe, but abſurd; contrary both to common Senſe, and to the known Laws and Obſervations of ſound Philoſophy; and that he who will now be an *Atheiſt*, muſt be an abſolute *Ignoramus* in Natural Knowledge; muſt neither underſtand the Principles either of Phyſicks or Aſtronomy. Let us conſider farther, that as to *Deiſm*, or the Denial of the Scriptures, and of Divine Revelation, it is really Ill Mens *laſt Refuge*, and taken up of late, not by honeſt Enquirers, impartially ſearching after Truth, and diſcovering upon Evidence, that all

all Revealed Religion is falſe; but that it is chiefly fallen into of late, by ſome Irreligious Perſons, in the Diſtreſs of their Affairs, and upon that ſurprizing and overbearing Light, which Sir *Iſaac Newton*'s wonderful Diſcoveries have afforded; whereby they have perceiv'd that Natural Religion, with its Foundations, were now become too certain to bear any farther Oppoſition. That this is true, I appeal to a certain Club of Perſons, not over-religiouſly diſpos'd, who being ſoberly aſked, after Dr. *Bentley*'s remarkable Sermons at Mr. *Boyles*'s Lectures, built upon Sir *Iſaac Newton*'s Diſcoveries, and level'd againſt the prevailing Atheiſm of the Age, *What they had to ſay in their own Vindication againſt the Evidence produc'd by Dr.* Bentley? The Anſwer was, *That truly they did not well know what to ſay againſt it, upon the Head of Atheiſm: But what*, ſay they, *is this, to the Fable of Jeſus Chriſt?* And in Confirmation of this Account, it may, I believe, be juſtly obſerv'd, that the preſent groſs *Deiſm*, or the Oppoſition that has of late ſo evidently and barefacedly appear'd againſt Divine Revelation, and the Holy Scriptures, has taken its Date in ſome Meaſure from that Time. And as to the main Obſervation which I am now upon, I mean that this modern Infidelity is not properly owing to any new Diſcovery of the want of real Evidence for Reveal'd Religion, or of the Falſity of any of the known Foundations of it; but to the like Neceſſity of Affairs, and the Impoſſibility of ſupporting the former, and worſer Notions, I think is plain from theſe Two farther Conſiderations: Firſt, That the moſt truly Learned, the deepeſt Enquirers, and

but the *certain Theory* of them, atteſted to be ſuch by unqueſtionable Evidence, from Aſtronomical Obſervations, and from ſure Geometrical Reaſonings thereupon. So that the Concluſions regularly drawn from ſuch Premiſes, ought themſelves to be look'd on as *Certain*. We have there alſo diſtinctly followed the Steps of Nature, and drawn out her grand Secrets into plain Tables, for the Uſe of every body; even of thoſe who are not Mathematicians good enough to Calculate themſelves: And have farther given the Manner and Reaſon of each Operation, for every ones entire Satisfaction. Nor need my Readers take even the *Lemmata* themſelves for granted, if they underſtand but ſome Elements of Geometry. For they are demonſtrated every one in my *Mathematical Philoſophy*, and that generally after ſo plain a Manner, that I dare ſay very ordinary Mathematicians will be able to underſtand thoſe Demonſtrations. By theſe Calculations it is that we arrive at the compleateſt and moſt exact Knowledge of this *Noble*, this *Amazing*, this *Divine Syſtem*. Nor can I imagine that the Inquiſitive Reader, when he has well conſider'd the Particulars, will think that any of thoſe Epithets, *Noble*, *Amazing*, and *Divine*, are by me wrong apply'd in this Matter. For here we diſcover that all the Heavenly Bodies *Revolve* in thoſe moſt agreeable Geometrical Curves, the *Ellipſes*; the Planets in thoſe that are very little Eccentrical; and the Comets in thoſe that are prodigiouſly ſo; even in ſuch as are almoſt Parabolical. By which known and Regular Orbits, we readily reduce their Motions to Calculation, and eaſily diſco-

diſcover the Law of Gravity belonging to them. Here we contemplate the *Periods* of all the Planets Primary and Secondary, and of the Comets, about their Central Bodies, from the ſmalleſt Period of the Innermoſt Circumjovial of 42 Hours and a half; to the largeſt of the outmoſt Comet of 575 Years. Here we take a View of the vaſt middle *Diſtances* of all the Planets, Primary, and Secondary, and of the Comets, from their Central Bodies, deriv'd from the beſt Obſervations, from the leaſt of the innermoſt Circumjovials of 130.000, to the greateſt of the utmoſt Comet of 5.600,000.000 Miles; the leaſt of which diſtances does prodigiouſly ſurpaſs the Power of Human Imagination, which can no way enlarge it ſelf to any ſuch meaſures. Here alſo we may diſcover the ſurprizing *Magnitudes* of the ſeveral Bodies belonging to our Syſtem, both in Diameter, Superficies, and Solidity, from the ſmaller Quantities in our Moon, of 2170 Miles Diameter; 14,000.000 ſquare Miles of Surface; and 5.000,000.000 cubical Miles, of Solidity; to the vaſtly greater Quantities in the Sun of 763.000 Miles Diameter; 1,813.200, 000.000 ſquare Miles of Surface; and 230.000, 000.000,000.000 cubical Miles of Solidity. Numbers that are ſtill more immenſely beyond all Human Imagination; and, ſuch as, if *Epicurus* or *Lucretius* were alive, who could raiſe their ſtupid Conceptions no farther than the largeneſs of a Cart-wheel for the Sun it ſelf, would have quite affrighted them out of their fooliſh Philoſophy. We here learn the *Annual Velocities* of the ſeveral Planets, Primary and Secondary; and of the Comets, from the ſloweſt Motion in the Moon, of 2200 Miles, to the

ſwifteſt in *Mercury*, of 100.000 Miles, in the ſpace of one Hour. As alſo we here learn the *Diurnal Velocities* at the Equator, the ſloweſt of the Moon of 10 Miles, the ſwifteſt of *Jupiter* of 25.000 Miles in the ſame ſpace of one hour: And that even we upon the Surface of this Earth, when we croſs the Line, with all our Buildings, move along 1030 Miles in an Hour; and that by Conſequence, in this Latitude, I my ſelf, while I ſeem to be at reſt, writing this Treatiſe in my Study, do yet, together with my Study, and my Books, revolve at the rate of above 600 Miles in the ſame time. Nay, we here get a ſtep farther, and, without going down into the Central Regions of any one of the Celeſtial Bodies, do certainly pronounce, not only concerning the Mathematical *Quantity* of Bulk or *Magnitude*, but in many Caſes concerning the real Phyſical *Quantity of Matter* contain'd in thoſe Bodies, as compar'd, I mean, with one another; which is as far as Philoſophy can poſſibly carry us. Whereby we find that the Moon, which is the leaſt of all thoſe Bodies whoſe Quantities of Matter we know, is not quite the 9,000.000th part ſo great in this reſpect as the Sun; and that the Quantity of Matter of all the Planets and Comets taken together, does not in probability amount to the 500th part of that in the Sun alone; the *Sun*, I ſay, that moſt amazing and moſt prodigious Creature of God that is in this Syſtem, and perhaps in all the viſible Syſtems about us! of which Mr. *Milton* bravely ſings;

Paradiſe Loſt. Lib. V.

Thou Sun, of this great World, both Eye and Soul,
Acknowledge God thy Greater: Sound his Praiſe
In thy Eternal Courſe! More-

Moreover, we here certainly diſcover by Conſequence, the very inward Texture of the ſame Celeſtial Bodies, whoſe Quantities of Matter were above determin'd; and, without digging into the Bowels of any of the Planets, do, with equal Certainty, pronounce what comparative degree of *Denſity* they have: Whereby we learn that the Sun is vaſtly too denſe for a Flame, as *Cartes* determined; and that the Moon is the Denſeſt, and *Saturn* the Rareſt of all theſe Bodies; and that the former is above eight times as denſe as the latter. Which Concluſions ſhew the admirable Nature, and profound Reach of Sir *Iſaac Newton*'s Philoſophy, which, with equal eaſe and certainty, penetrates to ſuch deep Truths, as no other Hypotheſes do ſo much as in the leaſt hope or pretend to attain to, even by Conjecture. Nor do we ſtop here; but, placing our ſelves on the ſeveral *Surfaces* of the fore-mentioned Planets, we, by certain Reaſoning, determine the comparative *Weight* of any given Body on thoſe ſeveral Surfaces; and obſerve, with great Satisfaction, that the ſame Strength that can here lift One Hundred Pound, would not be able on the Sun's Surface to lift Four Pounds; and that what on the Moon's Surface, where this Weight is the leaſt, would weigh one Pound; would, if tranſferr'd to the Sun's Surface, where it is the greateſt, weigh above 71 of the ſame Pounds. We do alſo here Contemplate thoſe *Diurnal Motions* with reſpect to the other Heavenly Bodies, which we are forced to gather by Geometrical Reaſoning, with reſpect to our own Earth; and which the ſeveral Inhabitants of thoſe Bodies, (if ſuch they are, and if they be provided with

ſuch

ſuch Means of ſeeing our Earth, as our Teleſcopes have of late afforded us for ſeeing them) may alſo Contemplate with their Eyes. Whereby we find that they do revolve in Periods ſufficiently unequal; from the ſloweſt, that of the Moon, in 27⅓ Days, to the ſwifteſt, that of *Jupiter*, in a little leſs than 10 Hours: which Sight ſeems to me to be a kind of ſenſible Confirmation of the like Diurnal Motion of our Earth.

We are here alſo taught to eſtimate the different *Degrees of Heat and Light*, which our Fellow Creatures derive from the great Fountain of both, the Sun, when nearer, and when farther off than we are: Which difference is ſo vaſtly great, even at the mean Diſtances of the ſeveral Bodies from the Sun, that *Mercury*, the neareſt, has in a Mean no leſs than 120000 times the Quantity of Light and Heat which the utmoſt Comet has; and that the Heat at the Sun's Surface is no leſs than 45000 times as great as any part of this Earth receives from it, at any time; and that withal the outmoſt of our known Comets abides at one time an Heat more than 400,000,000 of times, as great as it does another. An *amazing difference* this! and ſuch as is no where elſe to be parallel'd, that we know of, in the whole Syſtem of Nature. We here alſo ſee, how ſoon our Earth, and any of the Planets would *fall to the Sun*, or to their central Bodies, if their Projectile Velocities ſhould ceaſe; from the innermoſt of the Circumjovials, which would fall to *Jupiter* in 7 Hours; to the outmoſt Comet which would not fall from its middle diſtance to the Sun under 66 Years. We have alſo taken a

view

view of our neighbouring Body the Moon, and found it in almoſt all reſpects ſuch a Planet, or Place of Habitation, as our own Planet the Earth is. And we ſhould be greatly wanting to our Selves, and to the *Decorum* of Things, as well as highly injurious to our great Creator, if we ſhould ſo much as ſcruple the Suppoſition of ſo noble an Habitation's being Inhabited; of ſo noble a Colony's being Peopled. Thoſe who can attentively view the Wonderful, and Beautiful, and Admirably contriv'd Structure of this our adjoining Planet with its Sea and Land, Mountains and Valleys, Day and Night, Summer and Winter; together with its Clouds and Atmoſphere, and Moon; all in correſpondence to our Earth, which is every where full of intelligent Beings its Inhabitants; and yet ſhall peeviſhly deny that it either now is, or ever was, or is to be in like manner inhabited by ſuch Intelligent Beings; and are reſolv'd it ſhall have no other Uſe than to enlighten our Earth, and be peep'd at through our Teleſcopes; ſeem to me too Unphiloſophical to be Argued with; and only worthy to be left to their own narrow Genius, which can neither think a brave uncommon Thought, nor admit any thing but what their Education or Syſtem have already forc'd upon them. Nor indeed, do we need to debate here with ſuch Men; becauſe it can hardly be imagined they will ever have Skill or Curioſity enough to peruſe, what either has already been written, or may hereafter be written upon ſuch great and noble Subjects. Beſides this ſingle Attendant of ours, we have taken a Proſpect of Four ſuch Attendants on *Jupiter*, and Five on *Saturn*, with the remarkable *Bells*,

and

and Diurnal Revolution of the former; and the much more aſtoniſhing *Ring* of the latter: The One bearing a near reſemblance to our Clouds under the Torrid Zone, upon our Earth's daily Motion, and ſo hinting to us the Likeneſs there is between that and our own Planet: And the Other affording an Inſtance of a more ſurprizing Variety in the Works of God and Nature than is any where elſe to be ſo evidently diſcover'd in the World. Nor muſt I here paſs over in Silence that wonderful, that prodigious, that amazing Inſtance of *Swiftneſs of Motion*, which the Rays of Light afford us, and which is gathered from the Eclipſes of *Jupiter*'s Planets; no leſs I mean than that of 180.000. Miles in one Second of Time; whence it appears, that a Being, might viſit all the Men in the World, if he proceeded with the Swiftneſs of theſe Rays, and thoſe Men were placed in any tolerable Order along or near a great Circle of the Earth, in a very few Seconds of time. Nor do any of the other ſwifteſt Motions that we know of in the Univerſe deſerve to be called *ſwift* in compariſon of this before us; which is no other than a conſtant Inſtance of the Power of God in moving the Bodies which he has made, with what Velocity he pleaſes; and thereby of communicating his Influences, even in a Mechanical Way, to immenſe Diſtances, almoſt in a Moment. But then, beſides this Planetary World, which was in ſome meaſure known to the Ancient Aſtronomers, we have alſo taken a View of another World, or Species of Bodies, known indeed by Name, but hardly at all by Nature to the Ancients; I mean the Syſtem of Comets, which till lately were gene-

rally

rally look'd on as inconſiderable and fortuitous Meteors of our Air only; but do now appear to be more numerous, and not leſs conſiderable than the Planets themſelves. Theſe Comets paſs ſo entirely through the Planetary Regions, and may ſo certainly approach to the Planets themſelves both in their Deſcent and Aſcent; that they may ſerve hitherto unknown Ends of Providence, both in their own Conſtitution, and by the Changes they may occaſion in the Planets; and do therefore well deſerve our moſt attentive Conſideration. Nor certainly were the Planets, their Number, Magnitude, Motions, and Uſes ſo well known in ſome Thouſands of Years after their firſt Obſervation, as the Comets how are in a few Hundreds, or rather Decads of Years ſince they were to any good Purpoſe obſerved by Aſtronomers. And then, laſtly, after all, we have taken a ſhort imperfect View of the vaſtly numerous, the vaſtly great, and vaſtly diſtant Syſtems of the Fixed Stars, or to us new Syſtems of Worlds quite remote from this our Planetary and Cometary World: In compariſon of all which Syſtems of Worlds, our own entire Syſtem, with its Sun, and all its Planets and Comets, muſt be but inconſiderable; probably not the 10.000th, perhaps not the 100.000th, or 1,000.000th Part of the Whole: And whoſe Diſtance appears to be ſo great from us, that a Musket Bullet that ſhould go 240 Feet in one Second of Time, if it had been ſhot up at the *Moſaick* Creation to the neareſt fixed Star, and continued its Courſe evenly all the Way, would hardly have arrived there by this time, after the long Interval of 5700 Years. So immenſly numerous, and immenſly great and glorious is the entire Syſtem; and ſo inconſiderable

rable are we poor Worms, creeping upon this little little Earth, if compared thereto; even
Iſa. xl. 17. *as Nothing, yea leſs than Nothing, and Vanity!* And here we have plainly loſt our ſelves in the amazing *Length* and *Breadth*, and *Height* of the Grand Syſtem, and of that Power, Wiſdom, and Goodneſs, which ſhines forth in every Branch thereof; thoſe chiefly excepted which depend on the Actions of Free-Creatures, and the manner of their Treatment by that Providence which diſcovers it ſelf in the whole Univerſe; the Rules of whoſe Conduct are not yet laid fully open to our preſent Curioſity, but are rather reſerved for the laſt and nobleſt Scene of our Duration hereafter. Nor is this to be ſo much wondred at, if we conſider that the moſt beautiful, and orderly, and wiſely contrived Syſtem of this viſible World it ſelf, which we have been juſt reviewing, tho' it has all along, ſince the beginning of the World, afforded many and noble Indications of that Divine Power, Wiſdom, and Goodneſs to all Mankind, yet have the entire Secrets of that Contrivance, with that univerſal Power of Gravitation, by which the whole Machine has all along been upheld, lain in a manner hid through all paſt Ages, and is but juſt now diſcovered to us. Nay, the very beſt Syſtem of the Heavens, which the Aſtronomers long had, is reported to have appeared to
Alphonſus. One of them ſo aukward, abſurd, and diſagreeable, that he was not able to reſtrain his Tongue from a kind of Blaſphemy againſt its Author; meerly becauſe the grand Myſteries of the whole Machine, by the Knowledge of which all thoſe ſeeming Diſorders are now entirely vaniſhed,

niſhed, was not at that time diſcovered to Mankind, but was reſerved for theſe later, and on that Account happier Ages of the World.

And now, Good Readers, having made this Review of the entire Univerſe, let us, in Agreement with the reſt of my Deſign, turn our Eyes from the Works to the Workman; from the Effects to the Cauſe; from the Creatures to the Creator; from theſe Glorious, theſe Divine Works of Nature, to the more Glorious and more Divine Author of Nature, the great *God, Bleſſed for ever*. For as it is excellently obſerv'd in the Book of Wiſdom, *Surely vain are* xiii. 1. *all Men by Nature who are ignorant of God; and could not, out of the good Things that are ſeen, know him that is; neither by conſidering the Works did they acknowledge the Workmaſter. — For by the Greatneſs and Beauty of the Crea-* v. 5. *tures proportionably the Maker of them is ſeen.* And if there be any Deductions of Human Reaſon which are eaſier and more obvious than the reſt, this Way of Arguing, which we have already uſed, from the *Houſe* to the *Architect*; from the *Clock* to the *Clock-maker*; from the *Ship* to the *Shipbuilder*; and from a *noble, large, well-contriv'd*, and *well-proportion'd*, and *moſt beautiful* Houſe, or Clock, or Ship, to the *excellent* Architect, the *skilful* Clockmaker, the *ſagacious* Shipbuilder; this is ſuch clear, natural, obvious, ſure Reaſoning, that we even at firſt make uſe of it in Childhood, and find it as clear, natural, obvious, and ſure in our elder Age; without occaſion for a Tutor to inſtruct us in it at firſt, or for a Logician to improve us in it afterward. And ſhall we reject that

that way of Reaſoning, in the moſt eminent of all Inſtances, which we are not able to avoid making in the ſmalleſt? Shall the comparatively few, trifling, imperfect Contrivances of every ſmall Machine here (which yet only applies the Powers of Nature to particular Purpoſes,) be univerſally, without Heſitation, allowed to prove a ſubtle, a ſhrewd, and a wiſe Contriver thereof? And yet, ſhall the numberleſs, the important, and the moſt compleat Contrivances, which ſurround us every where in this Univerſe, from the immenſly great Body of a Sun, to the as prodigiouſly ſmall Bodies of ſome *Animalcula*, be aſcrib'd to *Fate*, to *Chance*, to any Thing imaginable, beſides the great *Creator* and *Contriver* of all Things himſelf; to whom yet from the earlieſt to the lateſt Records of Mankind, as we have ſeen, the Wiſeſt and Beſt have ever freely and unanimouſly aſcribed them? But why do I ſpeak of the *Wiſeſt* and *Beſt* only in this Caſe? As if the reſt of Mankind have generally had other Notions. No, the whole Race of Mankind, abating a very few, little better either for Ignorance, or Vice, or both, than Monſters, have ſtill from one Generation to another drawn the very ſame Concluſions and Truths in their Minds; tho' they have not all made equal Application of thoſe Concluſions and Truths to their Practice. In witneſs whereof, I might alledge the Conceſſions of not a few ſuch bad Men; but ſhall chuſe only to inſtance in the late famous Earl of *Rocheſter*, who long wanted, not ſo much Abilities to diſcover, as Goodneſs to make uſe of ſuch Arguments. This Perſon therefore, as I have been informed, having been one Night deeply engag'd in Atheiſtical and Blaſphemous Diſcourſe among

maong his Companions, as he too frequently was, after a while happen'd to have occaſion to ſtep abroad: where the Sky, being very clear, preſented him with a glorious Proſpect of no ſmall Part of that beautiful World which we have been more diſtinctly deſcribing. Upon the View of which he was overheard to ſay, *What a Dog am I, thus to blaſpheme Him that made me and all this beautiful World!* I do not at preſent recollect from whom I had this Account; tho' the Thing it ſelf was too remarkable to be forgotten. But whether any Miſtake might be made in the Circumſtances of this Story or not, 'tis unqueſtionable that ſuch muſt frequently be the natural Reflections of a conſidering Mind, in theſe Circumſtances; whoſe Impreſſions nothing can entirely ſuperſede. As for my ſelf, I muſt freely own, that as I had from my Childhood ever learned from the Works of God to acknowledge and worſhip Him that made them; and as I improv'd in Anatomy, in Aſtronomy, in Natural Philoſophy, I ſaw that this firſt Impreſſion or Voice of Nature was ſtill more and more confirm'd and eſtabliſhed by farther Enquiries; ſo that when, in my younger Days, I had with great Difficulty and Pains, attained to the Knowledge of the true Syſtem of the World, and of Sir *Iſaac Newton*'s wonderful Diſcoveries thereto relating, I was not only fully *convinc'd*, but *deeply and ſurprizingly affected* with the Conſequences of this Nature; I was ſatisfy'd that they were evident *Demonſtrations of Natural*, and noble *Atteſtations to Revealed Religion*. In which Principles the farther Improvements I have ſtill made, or ſucceeding Diſcoveries of others have ſtill preſented to me, the more ſure

and certain have thoſe Principles appeared; and the more ſure and certain have thoſe Conſequences ſeem'd; tho' it muſt be confeſs'd that the Deepneſs of the Surprize and Impreſſion, as in all the like Caſes, can never be ſo ſenſible and affecting, as it was upon the firſt Knowledge of ſuch amazing Truths, and momentous Corollaries from them. And I cannot but heartily wiſh, for the common Good of all the *Scepticks* and Unbelievers of this Age, that I could imprint in their Minds all that real Evidence for Natural and for Reveal'd Religion that now is, or during my paſt Enquiries has been upon my own Mind thereto relating: And that their Temper of Mind were ſuch as that this Evidence might afford them as great Satisfaction as it has my ſelf. For then I am ſure they would not wonder at my warm and zealous Endeavours, even at the Hazard of all I have in this World, for the Reſtoration of true Religion, for the reſcuing the Wicked out of their dangerous State, and for the bringing as many as poſſible to that future Happineſs; which is the grand Deſign of Religion, and the ultimate Felicity of Mankind. But tho' this entire Communication of the Evidence that is, or has been in my own Mind, for the Certainty of Natural Religion, and of the *Jewiſh* and Chriſtian Inſtitutions, be in its own Nature impoſſible; yet I hope I may have leave here to addreſs my ſelf to all, eſpecially to the *Scepticks* and Unbelievers of our Age; to do what I am able for them in this momentous Concern; and to lay before them, as briefly and ſeriouſly as I can, a conſiderable Number of thoſe Arguments which have the greateſt Weight with me, as to the hardeſt Part of

of what is here defired and expected from them; I mean the Belief of Reveal'd Religion, or of the *Jewiſh* and Chriſtian Inſtitutions, as contain'd in the Books of the Old and New Teſtament; or in all the Genuine Records now extant of both Religions. I have already obſerv'd that the *Sceptick*s and Unbelievers of the beſt Senſe do now confeſs, that the Arguments for a God, his Attributes, and Providence, are very ſtrong; but they will by no Means allow, that thoſe for Divine Revelation, and for the Bible are ſo: Tho' indeed very few of them, I ſpeak it upon certain Experience, have ſtudyed thoſe Sacred Books with any Degree of that Impartiality, Serioufneſs, Application, Sagacity or Piety, which is but requiſite for forming any tolerable Judgment about them. But to wave farther Preliminaries, ſome of the principal Reaſons which make me believe the *Jewiſh* and *Chriſtian* Revelations to be true, are theſe following.

I. The Reveal'd Religion of the *Jews* and Chriſtians lays the Law of Nature for its Foundation; and all along ſupports and aſſiſts Natural Religion; as every true Revelation ought to do.

II. Aſtronomy, and the reſt of our certain Mathematick Sciences, do confirm the Accounts of Scripture; ſo far as they are concern'd.

III. The ancienteſt and beſt Hiſtorical Accounts now known, do, generally ſpeaking, confirm the Accounts of Scripture; ſo far as they are concern'd.

IV. The more Learning has increas'd, the more certain in general do the Scripture Accounts appear, and its difficult Places are more clear'd thereby.

V. There are, or have been generally, ſtanding Memorials preſerv'd of the certain Truths of the principal Hiſtorical Facts which were conſtant Evidences for the Certainty of them.

VI. Neither the Moſaical Law, nor the Chriſtian Religion, could poſſibly have been receiv'd and eſtabliſhed without ſuch Miracles as the Sacred Hiſtory contains.

VII. Altho' the *Jews* all along Hated and Perſecuted the Prophets of God; yet were they forced to believe they were true Prophets, and their Writings of Divine Inſpiration.

VIII. The Ancient and Preſent State of the *Jewiſh* Nation are ſtrong Arguments for the Truth of their Law, and of the Scripture Prophecies relating to them.

IX. The Ancient and Preſent States of the Chriſtian Church are alſo ſtrong Arguments for the Truth of the Goſpel, and of the Scripture Prophecies relating thereto.

X. The Miracles whereon the *Jewiſh* and *Chriſtian* Religion are founded, were of old owned to be true by their very Enemies.

XI. The Sacred Writers, who liv'd in Times and Places ſo remote from one another, do yet all carry on One and the ſame grand Deſign, *viz.* that of the Salvation of Mankind, by the Worſhip of, and Obedience to the One true God, in and through the King *Meſſiah*: which without a Divine Conduct could never have been done.

XII. The principal Doctrines of the *Jewiſh* and *Chriſtian* Religion are agreeable to the ancienteſt Traditions of all other Nations.

XIII. The Difficulties relating to this Religion are not ſuch as affect the Truth of the Facts, but

but the Conduct of Providence; the Reasons of which the Sacred Writers never pretended fully to know, or to reveal to Mankind.

XIV. Natural Religion, which is yet so certain in it self, is not without such Difficulties as to the Conduct of Providence, as are objected to Revelation.

XV. The Sacred History has the greatest Marks of Truth, Honesty, and Impartiality of all other Histories whatsoever; and withal has none of the known Marks of Knavery and Imposture.

XVI. The Predictions of Scripture have been still fulfilled in the several Ages of the World whereto they belong.

XVII. No opposite Systems of the Universe, or Schemes of Divine Revelation, have any tolerable Pretences to be true, but those of the *Jews* and *Christians*.

These are the plain and obvious Arguments which persuade me of the Truth of the *Jewish* and *Christian* Revelations: which I shall briefly insist on here, and earnestly recommend them to the farther Consideration of the inquisitive Reader: Hoping that He will first endeavour to attain that Serious, Upright, Impartial, Honest, and Obedient Temper of Mind, that a Creature ought to have when he is enquiring into the Laws and Will of his Creator; and will join with me in putting up to that great Creator, some such humble Address as this following, for the good Success of his Enquiries.

"O God of my Fathers, and Lord of Mercy; Wisd. ix.
"who hast made all things with thy Word: Give 1, 4, 5, 10.
"me Wisdom that sitteth by thy Throne; and
"reject me not from among thy Children. For

" I thy Servant, and Son of thine Handmaid, am a
" feeble Perſon, and of a ſhort time: O ſend her
" out of thy Holy Heavens, and from the Throne
" of thy Glory! That being preſent ſhe may la-
" bour with me; that I may know what is plea-
" ſing unto thee: *Amen*!

(I.) The firſt Reaſon, why I believe the *Jewiſh* and *Chriſtian* Revelations to be true, is this; That they lay the Law of Nature for their Foundation; and all along ſupport and aſſiſt Natural Religion; as every true Revelation ought to do.

That all Divine Revelation ſuppoſes the Being and Attributes of God, which are diſcoverable by the Light of Nature; and particularly the Perfections of Unity, Juſtice, Veracity, Holineſs, and Goodneſs, all conſidering Men will readily grant: And that no pretended Revelation, which clearly and evidently contradicts the Laws of Nature, founded on thoſe Divine Perfections, can be more than pretended, they will as readily grant alſo. So that I ſhall not need to prove that Part of my Propoſition. But then, that the *Jewiſh* and *Chriſtian* Revelations do, for the main at leaſt, moſt plainly and clearly agree with, and ſupport thoſe Natural Notions we have of God and of Religion, and is founded upon them, is every where ſuppoſed and affirm'd in all the Original Records of thoſe Religions. And if the Ceremonial Burdenſome Laws once given the *Jews*, be objected againſt, as unworthy of God, and oppoſite to his Wiſdom and Goodneſs, I ſhall take leave to ſay, that this is objected without any juſt Foundation, and contrary to the beſt and moſt authentick Accounts we have of the Reaſon of thoſe Laws;

I mean, that they were given on purpoſe for the Support of Natural Religion; and that this appears not only by occaſional Paſſages in the Sacred and Acknowledged Books of the Old and New Teſtament, but by an entire particular and noble Diſcourſe, which we have upon this whole Subject in the *Apoſtolical Conſtitutions*, and which without all diſpute is of much greater Authority than the uncertain Gueſſes of the Moderns. I have ſet down no ſmall Parts of this Paſſage elſewhere, in Vindication of thoſe Conſtitutions: yet are they of ſuch Importance, that I ſhall take leave to repeat them in this Place. *St.* Clement *and* Iren. *Vind. of the Conſtitut. P.* 8--11.

'We recommend to you, ſay the Apoſtles, *Titus*, and *Luke*, and *Jaſon*, and *Lucius*, and *Soſipater*. By whom alſo we exhort you in the Lord, 'to abſtain from your old Converſation, vain 'Bonds, Separations, Obſervances, Diſtinction of 'Meats, and daily Waſhings: for *Old Things are paſſed away, behold all things are become New.* *Conſtitut.* l. vi. c. 18. 2 Cor. v. 17.

For ſince we have known God through Jeſus Chriſt, and all his Diſpenſation, as it has been from the Beginning, that he gave a plain Law to aſſiſt the Law of Nature; ſuch an one as is pure, ſaving, and holy; in which his own Name was inſcrib'd; perfect, which is never to fail; being compleat in Ten Commands, unſpotted, converting Souls; which when the *Hebrews* forgot, he put them in mind of it by the Prophet *Malachi*, ſaying, *Remember ye the Law of Moſes, the Man of God, who gave you in charge Commandments and Ordinances*; ---- c. 19. iv. 4.

Now the Law is the Decalogue, which the Lord promulgated to them with an audible Voice, before the People made that Calf which repreſented the *Egyptian Apis*. And the Law is c. 20.

righteous; and therefore it is called the Law, becauſe Judgments are thence made according to the Law of Nature. ---- This Law is Good, Holy, and ſuch as lays no Compulſion in things Poſitive; for He ſays, *If thou wilt make me an Altar, thou ſhalt make it of Earth.* It does not ſay, *Make one*, but, *If thou wilt make*: It does not impoſe a *Neceſſity*, but gives leave for their own free Liberty; For God does not ſtand in need of Sacrifices, being by Nature above all Want. But knowing that as of old *Abel*, beloved of God, and *Noah*, and *Abraham*, and thoſe that ſucceeded, without being requir'd, but only mov'd of themſelves, by the Law of Nature, did offer Sacrifices to God, out of a grateful Mind, ſo he did now permit the *Hebrews*; not commanding, but, if they had a mind, permitting them; and, if they offer'd from a right Intention, ſhewing himſelf pleas'd with their Sacrifices. Therefore he ſays, *If thou deſireſt to offer, do not offer to me as one that ſtands in need of it; for I ſtand in need of nothing: for the World is mine, and the Fulneſs thereof.* But, after the Sin of the Golden Calf, then was God angry, as being ungratefully treated by them; and bound them with Bonds which could not be looſed; with a mortifying Burden, and a hard Collar, *&c.* ---- that being preſs'd and gall'd by thy Collar, thou may'ſt depart from the Error of Polytheiſm; and laying aſide that, *Theſe are thy Gods, O* Iſrael; may'ſt be mindful of that, *Hear, O* Iſrael, *the Lord our God is one Lord:* and may'ſt run back again to that Law which is inſerted by me in the Nature of all Men; That there is only One God, in Heaven, and on Earth;

Exod. xx. 24.

Pſal. l.

Ex. xxxii. 4.

Deut. vi. 4.

and

and to love him with all thy Heart, and all thy Might, and all thy Mind, and to fear none but him, *&c.*

But, *Bleſſed are your Eyes, for they ſee, and your Ears, for they hear:* Yours, I ſay, who have believ'd in the One God, not by Neceſſity, but by a ſound Underſtanding, in obedience to Him that called you; for you are releaſed from the Bonds, and freed from the Servitude —— C. 21. Matth. xiii. 16.

You therefore are *Bleſſed*, who are delivered from the Curſe. For Chriſt, the Son of God, by his coming, has confirm'd and compleated the Law; but has taken away the additional Precepts; although not all of them, yet at leaſt the moſt grievous ones: Having confirm'd the former, and aboliſh'd the latter; and has again ſet the Free Will of Men at Liberty: —— And beſides, before his coming he refus'd the Sacrifices of the People, while they frequently offer'd them when they ſinned againſt him, and thought he was to be appeaſed with Sacrifices, but not by Repentance, *&c.* —— [Here follow many excellent Quotations to this Purpoſe out of the Old Teſtament; and then the Conſtitutions go on:] If therefore before his coming, he ſought for a *clean Heart and a contrite Spirit, more than Sacrifices*, &c. —— Not taking away the Law of Nature, but abrogating thoſe additional Laws, *&c.* —— C. 22. Pſal. l. 12, 19.

For he did not take away the Law of Nature, but confirm'd it. For he that ſaid in the Law, *The Lord thy God is one Lord*; the ſame ſays in the Goſpel, *That they might know thee the only true God.* And he that ſaid, *Thou ſhalt love thy Neighbour as thy ſelf*; ſays in C. 23. Deut. vi. 4. John xvii. 3. Lev. xix. 18.

John xiii. 34. in the Goſpel, renewing the ſame Precept, *A new Commandment I give unto you, that ye love one another.* He who then forbad *Murder*, does now forbid *cauſleſs Anger.* He that forbad *Adultery*, does now forbid *all unlawful Luſts.* He that forbad *Stealing*, now pronounces him moſt happy who ſupplies thoſe that are in want out of his *own Labours.* He that forbad *Hatred*, now pronounces him bleſſed that *loves his Enemies.* He that forbad *Revenge*, now commands *Long-ſuffering*; not as if *juſt Revenge* were an unrighteous Thing, but becauſe *Long-ſuffering* is more excellent. Nor did he make Laws to root out our natural Paſſions, but only to forbid the Exceſs of them, *&c.* —— He has in ſeveral ways changed Baptiſm, Sacrifice, the Prieſthood, and the Divine Service, which was confin'd to one Place: For inſtead of *daily Baptiſms*, he has given only *one*, which is that *into his Death.* Inſtead of *one Tribe*, he has appointed that out of every Nation, the *Beſt* ſhould be ordained for the Prieſthood; and that not their *Bodies* ſhould be examin'd for Blemiſhes, but their *Religion and Lives.* Inſtead of a *bloody Sacrifice*, he has appointed that *reaſonable and unbloody myſtical one*, of his Body and Blood, which is performed, to repreſent the Death of the Lord by Symbols, *&c.* ——

Let us therefore follow Chriſt, that we may inherit his Bleſſings. Let us walk after the Law, and the Prophets, by the Goſpel, *&c.* ——

C. 25. Let us be obedient to Chriſt, as to our King; as having Authority to change the ſeveral Conſtitutions; and having, as a Legiſlator,

giſlator, Wiſdom to make new Conſtitutions, in different Circumſtances: Yet ſo that every where the Laws of Nature be immutably preſerv'd.

(II.) The next Reaſon why I believe the Truth of the *Jewiſh* and Chriſtian Revelations, is this; That Aſtronomy, and the reſt of our certain Mathematick Sciences, do confirm the Accounts of Scripture; ſo far as they are concern'd.

'Tis certain that in many Points we can examine the Aſſertions of Ancient Authors, whether they ſay true or not, by ſome Parts of the Mathematicks; and particularly in ſuch Caſes as the Enquiries of our Age enable us to examine Things more nicely than the Authors of Old Accounts could imagine: And againſt which Methods of Examination they could therefore by no means provide; any other ways, I mean, than by giving us the Ancient Facts as they really happen'd. In which Caſes the Diſcovery of the Juſtneſs of the Proportions of Things, and the Agreement of the Old Narrations with Mathematical Computations, will be a very great Argument for the Veracity of the Writers; as will the Abſurdity of ſuch Proportions, and the Diſagreement of Things, be a like great Argument for their Careleſneſs or Falſity. Now this Reaſoning being obvious; let us try ſome of the Sacred Narrations by it; and ſee on which Side this κριτηριον will incline us, and that in ſome of its moſt remarkable Inſtances. Thus we have already ſeen that the Age of the World, as taken from the Sacred Records, perfectly agrees with the beſt Methods which Chronology and Natural

Part vii. §. 3. prius.

Natural Hiſtory can afford us for its Determination.

New Theory, 2d Edit. p. 144, *&c.* Thus it has been elſewhere demonſtrated that the moſt Ancient Year of the World, even before, as well as after the Deluge, had juſt Twelve Months, of Thirty Days apiece, or Three Hundred and Sixty Days in the whole; as *Moſes*'s Account of the Deluge does moſt naturally imply.

Gen. vii. 11. *with* v. 24. *and* viii. 4.

New Theory, 2d Edit. paſſim. Thus I have elſewhere largely ſhewn That that Deluge muſt by all Aſtronomical Computations, have begun that very Month; nay, that very Week, and that very Day, which *Moſes* aſſures us it really did begin.

Chronol. Old Teſt. p. 12, 13, 14. *and* p. 55, —60. Thus alſo I have elſewhere ſhew'd how exactly the Canon of *Ptolemy*, the ſureſt Monument of Ancient Prophane Chronology now in the World, does agree to, and ſupport the Sacred Chronology; and indeed illuſtrate the Sacred Prophecies of *Daniel* thereon depending; and that in ſuch difficult Branches of it, as had been otherwiſe too hard for all our *Jewiſh* and *Chriſtian* Commentators. Many other Inſtances of this Nature may be alſo collected by the Inquiſitive from my *New Theory of the Earth*; from my *Chronology of the Old Teſtament, and Harmony of the Four Evangeliſts*; and from my *Eſſay on the Revelation of St.* John; to ſay nothing of my other Writings. But becauſe thoſe Examples have been there already produc'd by me, I ſhall ſay no more of them here; and rather alledge a remarkable one, which has not been there mentioned.

Ibid p. 198, 199, 200.

It

It is well known, that *Moſes* aſſures us, how at the general Deluge, all Land Animals that eſcap'd the ſame, were ſaved by an Ark; that this Ark held Sevens of Clean, and Pairs of Unclean Beaſts; with their Food for the full Space of a Year; and that from thence therefore all ſuch Creatures are now derived throughout the Earth. He alſo gives us the Dimenſions of this Ark, 300 Cubits long; 50 Cubits broad; and 30 Cubits high. Yet does it no way appear that *Moſes*, or any of his Contemporaries, could then examine the Number of all ſuch Animals, or the quantity of Food neceſſary for them, during ſo long an Interval, as the Modern Mathematicians and Naturaliſts have done. Here therefore we have one of the faireſt and moſt exact Methods of trying the Verity of this Part of the Sacred Hiſtory that could well be deſired: And this Method has accordingly been put in Practice in this very Caſe, by Two Eminent Mathematicians and Naturaliſts, *Buteo*, and Biſhop *Wilkins*; and it has thence appeared, that if we Meaſure all by a common Cubit of 18 Inches, the Ark will fully contain all thoſe Creatures, with their Food for a Year; and that in ſeparate and convenient Cells and Apartments; though in a ſomewhat ſtrait and difficult Manner. It has alſo ſince appeared, by Biſhop *Cumberland*'s more exact ſtating of the Old Cubit, that it was not ſo ſhort as 18, but in Reality near 22 Inches long; and by Conſequence, as that Learned Prelate judiciouſly obſerves, that an Ark built by that Cubit, being almoſt double to one built by this other, will not only in a ſtrait Manner, but

Gen. vi. vii. viii.

See Pool's *Synopſis*, *and* Biſhop Wilkins.

Scripture Weights and Meaſures,

but with great Eaſe and Freedom, contain all that we have above-mentioned; though this it will do ſtill, without abundance of waſt Room, which would have ſerved to no uſeful Purpoſes. So that the Reſult of this Computation is plainly this; That the Dimenſions of *Noah*'s Ark, as ſet down in the Sacred Hiſtory, are fully atteſted to by Geometry and Natural Hiſtory; and that thoſe Dimenſions are as well proportion'd to the End for which they were deſign'd, as any Mathematician or Architect could now chuſe for the like Purpoſes: Which Exactneſs, ſince none in the Days of *Moſes* could naturally attain to, 'tis moſt reaſonable to ſuppoſe it true Fact, and to aſcribe the Direction of the whole, as *Moſes* does, to the moſt perfect *Geometrician*, who acts always *in Number, Weight, and Meaſure*, the Great Creator and Provider for Mankind, and all Creatures whatſoever.

(III.) Another Reaſon why I believe the Truth of the *Jewiſh* and *Chriſtian* Revelations, is this; That the other Ancienteſt and beſt Hiſtorical Accounts now known, do, generally ſpeaking, confirm the Accounts of Scripture, ſo far as they are concern'd. That this is a moſt natural and ſure way of diſcovering the Veracity of any pretended Ancient Hiſtories in one Country, to compare them with the other Ancient and Approved Records of the Neighbouring Nations, which had Concerns with them; or with any other Ancient Records that are of good Eſteem relating to the ſame Times, and the ſame Affairs, is without Controverſy among all Men. Accordingly, when we are examin-

examining the Veracity of the Sacred Writers of the *Jewiſh* Nation, by whom almoſt all the Books of Scripture were written, it cannot but be highly neceſſary to proceed by the ſame Method. Nor are our Unbelievers unappriz'd of the Fitneſs of this Procedure, when they appear ſo ready to alledge even the moſt poorly atteſted Antiquities of ſome other Nations, to oppoſe them to theſe well atteſted Antiquities of the *Jews*: Which Procedure ſhews at once their Acknowledgment of the Reaſonableneſs of this way of Enquiry; and yet the Weakneſs of their Cauſe upon ſuch an Examination. For, give me leave to ſay, that if all the ſmaller Fragments, of even any tolerable Credit or Antiquity, which can be found in all the old Books, of which we have any Accounts, and may ſeem conſiderably to contradict the Sacred Records, were gathered together, and were compar'd with thoſe moſt Ancient, Authentick, and Numerous Books and Fragments, which evidently ſupport them; thoſe I mean, collected by *Joſephus* againſt *Apion*; by *Euſebius* in his Evangelical Preparation and Demonſtration; by *Huetius* in his Evangelical Demonſtration; by *Grotius* in his Truth of the Chriſtian Religion; by *Bochart* in his *Phaleg.* and *Hierozoicon*; by Biſhop *Stillingfleet* in his *Origines Sacræ*; and by many others who have written on that Noble Subject, the Difference of the Evidence would appear vaſtly great and ſurprizing. Inſomuch that one of the greateſt Maſters of all that Ancient Learning, *Grotius*, does directly profeſs, that if we do not reckon ſome open Enemies to the *Jewiſh* and *Chriſtian* Religions who,

De veritat. Relig. Chriſt. iii. 14.

who lived too late to know Things themſelves, and were too partial to be believ'd without other Authority, there are not any Genuine Records, or Teſtimonies of Antiquity extant, that contradict the Scriptures. Which Thing being ſo, it is moſt highly reaſonable for us to have a great Veneration for thoſe Sacred Records, which, however different from Modern Hiſtories, as they ought to be, are yet ſo very agreeable to, and ſo fully confirm'd by the other oldeſt and moſt faithful Remains of the Ancient Ages of the World.

IV. Another Reaſon why I believe the Truth of the *Jewiſh* and *Chriſtian* Revelations is this; that the more Learning has increaſed, the more certain in general do the Scripture Accounts appear, and its difficult Places have been more clear'd thereby. If Hypotheſes, or Accounts of Things in any Kind, eſpecially when they are ſtrange and ſurprizing, be advanc'd or believ'd by any, and then put into the Method of Examination before the World, when it is improving in Knowledge, and New certain Diſcoveries are frequently made in all Parts of Learning; it is juſtly to be expected, that what is really true and well-grounded will ſtand the Teſt; and what is not ſo, will ſink under it: The one will thereupon be approv'd and eſtabliſhed; and the other rejected and diſcarded. Thus it happens frequently in Human Opinions; and by this means the Improvement of the Learning of theſe Two laſt Centuries has done vaſt Service to Truth, by diſtinguiſhing what is Solid and Genuine; from what is Trifling and Spurious. Thus

we

we now generally know which Writings pretending to Antiquity, or to belong to Ancient Authors of Reputation, are Genuine, and which are Suppoſititious; which till the late Revival of Critical Learning, were ſtrangely confounded together. Thus the late Improvements in Aſtronomy, particularly by Teleſcopes, and the wonderful Diſcoveries of Sir *Iſaac Newton*, have determin'd the Diſpute between the *Ptolemaick*, the *Tychonick*, and the *Copernican* Syſtems of the Heavens, in Favour of the laſt; which till lately was Matter of great Diſpute, even among the Aſtronomers themſelves. And a great Number of other Examples might eaſily be alledg'd to the ſame Purpoſe. Let us then apply this Method of Trial, and ſee whether the Ancient Polite Learning of the *Greeks* and *Romans* of Old; or the much greater and ſolider Learning of the Two laſt Centuries; the former of which grew up ſomewhat after the Times of the Old Teſtament, and the latter long after the Time of the New, has confirm'd or contradicted thoſe Sacred Books of the *Jews* and *Chriſtians*; that we may the better judge of their Solidity and Authority. Now in this Enquiry, what *Joſephus* has produc'd for the *Jewiſh* Religion, in his Books againſt *Apion*, already quoted, may ſerve as a Specimen of the vaſt Advantage the *Jewiſh* Inſpired Writings received from the *Greek* and *Roman* Learning; of which he was a great Maſter. And what *Grotius* has produc'd for both the *Jewiſh* and *Chriſtian* Religion, and the clearing their Difficulties in his *Truth of the Chriſtian Religion*, and Comments on

the Scripture, may be a Sample of the great Confirmation they all receive from the Revival of Ancient Learning in the laſt Ages; of which he was no leſs a Maſter. Nor, as I hope, will what has been above produc'd from the Modern Aſtronomy, Mathematicks, and Philoſophy, for the Support of the ſame Inſpired Writings, be unfit to be eſteemed a farther Specimen in general to the ſame Purpoſe. But that I may not ſeem wholly to content my ſelf with what has been already obſerved by my ſelf or others, under this Head, I ſhall produce a new Specimen or Two for the ſame Purpoſe. 'Tis well known what a Noiſe the Scepticks and Unbelievers make with the Uncertainty of very Old Accounts, and very Old Books; the great Omiſſions, Additions or Interpolations that may eaſily have happen'd in them, during a Courſe of many Ages; and the conſequent Uncertainty of the Books of the New, but eſpecially of thoſe of the Old Teſtament; and ſo moſt of all of the oldeſt Parts of it, ſuch as the Five Books of *Moſes*. Now in this Caſe the Revival of Learning, and of Languages, and the Inquiſitiveneſs of this laſt Age, has procur'd us a moſt Noble Treaſure, as an Atteſtation in this Matter, where it was leaſt expected: And from the ſmall Remainders of the Old *Samaritans*, ſtill left about *Sichem* in *Judea*, we have lately recover'd the *Pentateuch* it ſelf: Not as in later Ages, known and owned by the Body of the *Jewiſh* Nation, or Two Tribes, ſpread over the World; but as peculiarly receiv'd and allowed by all the Twelve Tribes, before the *Babyloniſh* Captivity;

as

as written in the Original Character uſed before that Captivity, by that whole Nation; and as continued down to, and received by the Remains of thoſe Ten Tribes in *Samaria*, all the Times of their bitter Hatred to the other *Jews*, even to this very Day. So that this muſt needs be a Copy entirely diſtinct from the common *Maſſorite* one now current, and in all Probability much older than thoſe from whence even the *Septuagint* made their Tranſlation, long before the Times of our Saviour. Yet upon the Compariſon of this *Samaritan Pentateuch*, with the common *Hebrew*, and with the *Septuagint*; abating the Diverſity of ſome Chronological Numbers in them all, as to the Lives of the Patriarchs, before and after the Flood, of ſmall Importance here, there appears but very little Difference between them; and none at all that I know of in any Points of Conſequence, either in Hiſtory, Doctrine or Practice. So that, for the main, it exceedingly ſtrengthens the Authority and Uncorruptneſs of our preſent Copies of the *Pentateuch*; and by Parity of Reaſon, of the preſent Copies of all the Books of the Old Teſtament, which do with us otherwiſe ſtand upon the ſame Foot, and are uſually of a much lower Antiquity than theſe Five Books of *Moſes*. 'Tis alſo well known that the Scriptures affirm, what ſeems to us very ſurprizing, and next to impoſſible, *viz.* that in the early Times of the World, Men commonly liv'd to many Hundred Years of Age; and that in particular before the Deluge, they liv'd frequently to near a Thouſand; that after the Deluge, their Lives declin'd gradually from Gen. v. *and* xi.

Five or Six Hundred, to about Seventy or Eighty Years only; although from the Days of *David*, till this Time, that Age of Man has been at a Stand, and about that ſmalleſt Duration. This Account muſt be own'd to be bold and ſtrange to us, after near 3000 Years Experience of the laſt and ſhorteſt Period of Human Life. But then, when we reflect that the Learning of *Joſephus* produc'd many ſtrong Ancient Atteſtations to this Account, which were then Extant; that the preſent *Chineſe Annals*, lately diſcover'd, exactly agree, ſo far as they are concern'd; as I have elſewhere ſhewn; and that the preſent Numbers of Mankind upon the Earth, taken together with the uſual Period of Years for their Increaſe and Doubling; and with the Number of Years that by the beſt Evidence the Earth has been in its preſent State; do plainly require ſuch longer Duration of Mens Lives in thoſe Ancient Ages: Which laſt ways of Trial are entirely owing to the new Improvements in Learning: We ſhall ſee Reaſon at once to believe the Truth of the Fact, how ſtrange ſoever it may now appear; and to pay a due Deference to thoſe Original Sacred Records, whence we were firſt and beſt inform'd of it. It cannot alſo but appear very ſtrange at firſt Sight in the Old Teſtament, that *David* and *Solomon* eſpecially, ſhould in ſo peculiar a Manner poſſeſs and make Uſe of a much greater Quantity of Silver and Gold than we have any like Examples of even in this Age; when yet by our Modern Navigation, the *Indian* Mines have yielded us ſuch new Treaſures of that Kind; and that yet afterward

Antiq. I. 4.

Chronol. p. 60--65.

p. 65--68.

ward the *Jewiſh* Nation ſhould loſe thoſe mighty Riches. Yet will all this appear very agreeable to Truth, if we conſult Dr. *Prideaux*'s late Admirable Book, *Of the Conjoining the Hiſtory of the Old and New Teſtament*, where in the very Beginning of it, he has trac'd the *Jewiſh* Navigation, and ſuch its Effects, with the greateſt Sagacity, and to the greateſt Satisfaction.

I might alſo inſtance in the Improvements in Sacred Chronology, by the Diſcovery of the Canon of *Ptolemy*; in the full Solutions of the Deluge long ſince paſt, and of the Conflagration yet to come; with many other Things of a like Nature, which the Modern Improvements and Diſcoveries have aſſiſted us in; and all ſtill in exact Agreement with the Scriptures of the Old and New Teſtament: But becauſe I have already hinted at theſe Matters under former Heads, and have elſewhere more fully inſiſted on them to the ſame Purpoſe, I ſhall no farther enlarge on them in this Place.

(V.) I believe the *Jewiſh* and *Chriſtian* Revelations to be true, becauſe there have been generally ſuch ſtanding Memorials preſerv'd of the Truth of the Principal Facts, as give us great Aſſurances they were real. That this is a proper and uſual way of preſerving the Memory of paſt Actions, the Cuſtoms, and Medals, and Pillars, and Inſcriptions, and Solemnities, and Sepulchral Monuments of all Nations, do Teſtify. And that both the *Jewiſh* and *Chriſtian* Legiſlators have remarkably taken the like Care and Method, I have elſewhere obſerv'd; *Primitive Chriſt. Reviv'd*, Vol. iii. C. 2. §. 4. p. 174–179.

obſerv'd; to which I refer my Reader. Only give me leave to Inſtance here, in a few of theſe ſtanding Memorials or Monuments which are not there taken Notice of, and which ſeem to me remarkable Confirmations of the Truth of the Sacred Hiſtory, even in ſome of its leaſt probable Branches. Thus the Accounts we have in *Geneſis* iii. of the Fall of *Adam*, upon the Temptation of the Devil under the Appearance of a Serpent, and the Suggeſtion of his Wife; and the conſequent Change of the State of our firſt Parents thereupon, is, in all its Branches, one of the moſt improbable and amazing Hiſtories in the whole Bible. I mean even as taken barely and literally, and as expounded in the Old Chriſtian Records themſelves; without thoſe abſurd Additions and Improvements which *Auſtin* and *Calvin*, with their Followers, have joined to it. Yet when I conſider that the Remains and Memorials of this great Cataſtrophe already mentioned, are evidently true in Fact, and yet can no way be accounted for on any other Hypotheſis; I ſubmit my Faith to the Evidence of the Sacred Hiſtory, ſo well atteſted to by the preſent State of Nature; and rather wait with Patience till Providence ſhall pleaſe to unravel the Myſtery of this ſurprizing Scene, than venture, by denying the Truth of the Facts, to oppoſe my ſelf to that ſtrong Evidence, which the *Moſaick* Hiſtory, as atteſted to by thoſe ſenſible Demonſtrations, affords us. Thus the *Dead Sea*, or Lake of *Sodom*, with its known, but unexampled and ſurprizing Phænomena, look as if it were the direct Remains of a terrible Earthquake, join'd with

Part vii. §. 4. p. 145. priùs.

See Biſhop Patrick on Gen. xix. 24, 25.

with a more terrible Shower of Fire and Brimſtone from Heaven, by which *a fruitful Land was turned into a Salt* and Sulphureous *Sea, for the* unnatural *Wickedneſs of them that dwelt therein:* Exactly according to the Sacred Hiſtory of that terrible Deſtruction of thoſe People, who at once Inhabited and Polluted that Noble Soil; and is become a ſeaſonable and ſtanding *Example, having ſuffered the Vengeance of an eternal* or unquenchable *Fire:* Or, in the Words of the Author of the Book of Wiſdom, *Of whoſe Wickedneſs even to this Day, the waſt Land that ſmoaketh is a Teſtimony; and Plants bearing Fruit, which never come to Ripeneſs; and a ſtanding Pillar of Salt, a Monument of an unbelieving Soul.*

Pſal. cvii. 34.

Jude v. 7.

x. 7.

Thus the Annual Feaſts of the Paſſover, of Weeks, and of Tabernacles, among the Ancient *Jews*, together with the Annual Baptiſm, and Weekly Communion among the Ancient Chriſtians; with their Solemnities of *Eaſter*, *Aſcenſion*, and *Pentecoſt*; beſides their immediate Application to the Uſes of Piety and Religion, did alſo admirably and conſtantly atteſt to the Truth of thoſe wonderful Facts, whoſe Memorials they were; I mean the miraculous Deliverance of the *Jews* from the *Egyptian* Bondage, with their Legiſlation, and living in Tabernacles for Forty Years in the Wilderneſs afterwards; and the Death, and Reſurrection, and Aſcenſion of our Saviour; on which Facts the Two Inſtitutions are principally founded. I might be very large and full under this Particular: But that would make this Argument too Diſproportionate to the reſt,

and would lead me too far out of my Way: So I forbear; and proceed to Declare,

(VI.) That I therefore believe the *Jewiſh* and *Chriſtian* Revelations to be true, becauſe I am perſuaded that neither of thoſe Religions could poſſibly have been receiv'd, eſtabliſh'd and preſerv'd in the World, without ſuch Wonders and Miracles as the Sacred Hiſtory contains, and which are undeniable Proofs of their coming from God. For, to ſay nothing here of the *Gentiles*, if we Conſider but the Obſtinacy and Perverſeneſs of the People of the *Jews* in all Ages, and that ſtill they did, to the utmoſt Times we can trace them, in general, and as a Nation, moſt firmly believe, and openly ſubmit, and moſt tenaciouſly adhere to the Doctrines, Diſcipline, Laws and Government delivered by *Moſes*; how ſtrange, uneaſy, or burdenſome ſoever, ſeveral of the Particulars were; and did yet in great Numbers, on the Preaching of the Goſpel, renounce many of thoſe their former Opinions and Conſtitutions, of which otherwiſe they were ſo exceeding tenacious; and entirely receiv'd, believ'd and obey'd the Chriſtian Revelation, on its firſt Appearance in the World; and this in Oppoſition to their former Prejudices, their certain Intereſts, their Reputation, and Deſire of Self-preſervation; nay at a Time when they knew they muſt frequently loſe, and ſuffer, and die for this new Religion; and all this without any other Hopes than what belong'd to another World; and muſt be entirely fruſtrated, if that Religion proved falſe: Conſidering all this, I ſay, it is, morally ſpeaking,

ing, impoſſible that ſuch Numbers, of *Jews* eſpecially, ſhould ſubmit ſucceſſively to both theſe Religions, as they certainly did, without convincing and undoubted Miracles for their Confirmation.

(VII.) I believe the Truth of the *Jewiſh* Revelation, becauſe I perceive that that Nation, which all along Hated and Perſecuted the Meſſengers and Prophets of God when they were alive, were yet forced to believe all along that they were true Meſſengers and Prophets of God, and their Writings of Divine Inſpiration. This is to me a very remarkable Obſervation, a very Certain one, and of the greateſt Conſequence in this Enquiry. That the *Jews* were anciently a Stubborn, Diſobedient, and Stiff-necked People, and not without the moſt forcible Methods to be reduc'd to the Obſervance of the Divine Laws, is evident in their whole Hiſtory; that they all along, in particular, oppoſed *Moſes*, and Rejected, and even Perſecuted and Slew, the ſucceeding Prophets, when they were ſent unto them to call them to Repentance and Amendment, is alike evident therein: That yet they were forced to own, that theſe Men were the true Prophets of God, is equally plain therein; and is demonſtrable from their conſtant Reception afterwards of thoſe Writings wherein theſe Things appear, as Divinely Inſpir'd, to this very Day. It is alſo clear in thoſe very Writings ſtill extant, that their Contents are ſo cutting and ſevere, without the leaſt Tincture of Flattery, or ſparing them in their Vices, that nothing but a full Conviction of the Certainty of their Divine Miſſion and Authority, could ever induce

induce them to a Reception of them. The Caſe in general of the *Jewiſh* Legiſlator and Prophets, was all along much the ſame with that of good *Micaiah*, in the Days of *Ahab*; concerning whom when *Jehoſaphat* enquired, *Is there not a Prophet of the Lord that we may enquire of him?* Wicked *Ahab* reply'd, *There is One Man*, Micaiah, *the Son of* Imlah, *but I hate him; for he doth not propheſy Good concerning me, but Evil.* Yet all this Hatred notwithſtanding, *Micaiah*'s Denunciation of God's Judgments upon *Ahab*, followed with its immediate and dreadful Completion, ſoon convinc'd them all, that he was a true Prophet of God: And He is accordingly ever ſince allow'd to have been ſuch by that whole Nation. And this has been equally true of the reſt of the *Jewiſh* Prophets all along: which ſeems to me a ſtrong Argument for their Veracity and Authority, as ſtill abſolutely undeniable among that Nation.

1 Kings xxii. 7, 8.

v. 19–38.

(VIII.) I believe the *Jewiſh* Religion to be True, becauſe the Ancient and Preſent State of the *Jewiſh* Nation ſhews the Truth of their Law, and of the Scripture Prophecies relating to them. The Law of *Moſes* did, in the plaineſt and moſt affecting manner, deliver ſuch obliging Promiſes to that Nation, upon their keeping cloſe to the Worſhip of the True God, and to the Obedience of the Laws then delivered to them; with ſuch terrible Threatnings upon their Rejection of them, upon their Idolatry and Diſobedience; and the ſucceeding Hiſtory and State of that Nation all along, does ſo clearly and particularly inform us of the Completion of thoſe Promiſes and Threatnings to this very Day, as afford

afford us the ſtrongeſt Evidence for the Divine Authority of thoſe Denunciations. [See Biſhop *Patrick* on *Deut.* xxviii]. Nor is the Caſe different in the particular Prophecies occurring in all the Old Teſtament, relating to their Deſcent into, and ſojourning in *Egypt*; their *Babyloniſh* Captivity under *Nebuchadnezzar*, and their Reſtoration under *Cyrus*; with their preſent long, and tedious Baniſhment from their own Country, without a Prophet, or King, or any Divine Revelation; with many other Circumſtances of their Affairs, which have been evidently fulfilled in their proper Seaſons. This Argument ſeems alſo to me of very great Weight. But becauſe I have elſewhere inſiſted on it, in my *Boyle's Lectures*, and in my *Chronology of the Old Teſtament*, I ſhall not here enlarge, but refer the inquiſitive Reader thither for his farther Satisfaction. Only I may be allow'd here to put the Unbelievers in mind, how peculiar and unparallel'd the State of this People has ever been. That at firſt they were ſeparated from the reſt of the World; that they lived in it afterward like a ſeparate Species of Creatures; that after all their Miſeries and Captivities, they have ſtill preſerved themſelves a ſeparate People, and ſtill recovered their ancient Land and Settlement again, in a wonderful manner, till this their laſt grand Captivity and Diſperſion; and that the Body of the two Tribes, and ſome Remains of the Ten at leaſt, are even now, to the Surprize of all conſidering Men, after ſome Thouſands of Years, a ſeparate Body, unmixt with other Nations, among which they ſojourn; as at once a ſtanding Monument of the Truth of their original Sacred

Sacred Books, and waiting in readineſs for their final Reſtoration, according to the ſame Prophecies.

(IX.) I believe the Chriſtian Religion in particular to be true, becauſe the Ancient and Preſent State of the Chriſtian Church ſhews the Truth of the Original Records of Chriſtianity, and of the Scripture Prophecies relating to them. The Author of our Religion, and his Apoſtles, referr'd the *Jews* to the many Predictions concerning their *Meſſias* occurring in the Old Teſtament; particularly, that famous one now known by the Name of *Daniel*'s 70 *Weeks*, which they could not then deny to be fulfilled in him: They foretold that Oppoſition, and Perſecution, which the Chriſtian Religion ſhould meet with in its Propagation; that yet it ſhould gradually prevail over the World, notwithſtanding ſuch Oppoſition and Perſecution: That the Body of the *Jewiſh* Nation, with their Temple and Worſhip, ſhould, for a Puniſhment of their heinous Sins in Crucifying their *Meſſias*, and Perſecuting his Followers, in that very Generation of Men, be utterly ſubverted and deſtroyed; that the *Jews ſhould fall by the Edge of the Sword; that they ſhould be led away Captive into all Nations; and that* Jeruſalem *ſhould be trodden down of the* Gentiles, *till the Times of the* Gentiles *ſhould be fulfilled:* That the Church of Chriſt ſhould at firſt be Pure and Holy: But that after ſome time falſe Teachers and Hereticks ſhould corrupt it: That at *Rome* or Myſtical *Babylon* eſpecially, a Grand Apoſtacy or Antichriſtian State ſhould ariſe, and over-bear and corrupt true Chriſtianity, and under Ten Antichriſtian Kingdoms, introduce Tyranny and Idolatry into it for 1260 Years

Mat. xxiv. 15. Mar. xiii. 14. 10. Dan. ix. 24, &c. Mat. xxiv. & paſſim alibi.

Luc. xxi. 24.

Mat. xxiv. 2 Theſſ. ii. 1 Joh. iv. 3. Apoc. paſſim.

Years together; till after which time the Church ſhould not be able to recover her Primitive Purity; with many other ſuch great, and ſtrange, and, when the Chriſtian Books were written, moſt highly improbable Events; all which have eminently and notoriouſly come to paſs in the Face of all the World, as the moſt convincing Demonſtrations of the Verity and Divinity of the Chriſtian Religion. I have elſewhere largely treated of the greateſt Part of theſe Predictions, in my Eſſay on the Revelation of St. *John*, and ſhewn the Exactneſs of their Completion, I ſhall not therefore enlarge any farther upon them in this Place.

(X.) I believe the Chriſtian Religion to be true, becauſe the Ancient Adverſaries of Chriſtianity acknowledg'd the Miracles whereon the Chriſtian Religion is founded, to be True. I here inſiſt only on the Confeſſion of Adverſaries as to the Truth of the Facts on which the *Chriſtian Religion* depends: Not that I doubt of the like Confeſſion as to the Miracles wrought by *Moſes* and the Prophets, for the Confirmation of the *Jewiſh* Religion, where-ever their Adverſaries had means of knowing the ſame. But becauſe we have but a few Records, or rather Fragments of Records now extant from the Heathen Writers, contemporary with thoſe of the Old Teſtament; and of them ſtill fewer that relate diſtinctly to the ancienteſt and principal *Jewiſh* Miracles, I chuſe to confine this Obſervation to the Chriſtian Miracles. And that theſe Facts themſelves were originally allow'd to be true by the Enemies of Chriſtianity, appears, not only from the Converſion of vaſt Multitudes

of

of thoſe Enemies by the convictive Evidence of ſuch Miracles to the Faith of Chriſt, which I have ſhewed could not have happen'd if they had not been ſatisfy'd of their Reality; but by the Hiſtory of the New Teſtament, and the Mention there of the Objections made againſt that Religion, which all ſuppoſed the ſame Reality; and by the Remains of the ancienteſt Writers againſt Chriſtianity, whether among the *Jews*, ſuch as *Trypho*; among the Heathens, ſuch as *Celſus*; or among the old Hereticks, ſuch as *Simon Magus*; which do almoſt unanimouſly confeſs, and take for granted, that Chriſt and his Apoſtles did work ſuch Miracles for the Confirmation of the Chriſtian Religion, as the Chriſtian Records do plainly teſtify at this Day. And I dare appeal to all our preſent Scepticks and Unbelievers, whether they can poſſibly perſuade themſelves, as the Old Infidels did, that the Chriſtian Religion is falſe, notwithſtanding there were very many real Miracles certainly wrought for its Confirmation: I believe they are not ſo weak; and I hope not ſo wicked neither as this comes to.

See Juſt. Dialog. *with* Trypho. Origen *againſt* Celſus. *Recognit. paſſim.*

(XI.) I do therefore believe the *Jewiſh* and *Chriſtian* Revelations to be true, becauſe the Sacred Writers, who liv'd in Times and Places ſo remote from one another, do yet all carry on One and the Same Grand Deſign, *viz.* that of the Salvation of Mankind, by the Worſhip of, and Obedience to, the One true God, in and through the King *Meſſiah*; which without a Divine Conduct and Inſpiration, reaching through thoſe Ages and Places, could never have been done. This Obſervation is very remarkable as to the *Jewiſh* and *Chriſtian* Writings, if they be compar'd with

with the ſeveral Books of the *Greek* Philoſophers; the former of which never diſpute or debate what their main Scope was to be, or what they were to have ever in View, as ever naturally tending to one known Deſign beforementioned; while the latter were ſo far from any common Principles of that Nature, that the very Deſign they were to aim at, or the *Summum Bonum* it ſelf, the ſupreme Happineſs of Man, was a Matter of wonderful Debate among them. Nay, *Varro*, one of their moſt famous Authors, is ſaid to have reckon'd up no fewer than 288 poſſible Opinions about it. And 'tis very plain, that the due Worſhip and bliſsful Enjoyment of the One True God, and that by the Means of the King *Meſſiah*; or indeed any other ſuch Noble and Divine Means of attaining them, are almoſt wholly Strangers to the Heathen Philoſophers. And no wonder, when they were ſo far from knowing the Nature and Will of the One True God, with the true Worſhip and Obedience due to him, which yet were knowable to Inquiſitive Honeſt Minds by the Light of Nature; or from owning the Neceſſity of a Mediator, or of Divine Revelation; that they did not generally acknowledge the One True God himſelf; much leſs did they make the Worſhip of, and Obedience to him, the Foundation of their Doctrine; as all ſound Philoſophy, as well as Divinity, ought certainly to have done. Accordingly, tho' they all agreed in the Excellency of Virtue in general, which God has too deeply ſtamp'd upon Human Souls, and made too evidently neceſſary in general to Human Happineſs, even in this World, to permit

Ap. Auguſt. De Civitat. Dei. L. xix. 1.

mit it to be overlook'd by any thinking Men; yet did they agree in almoſt nothing elſe. And indeed, their ſeveral Philoſophical *Dogmata*, ſeem like our Modern School-Divinity, to have been rather creditable Kinds of Amuſements, and Subjects for the Exerciſe of Wit and Parts in Diſputation, than directed to the real Inſtruction and Improvement of Mankind in true Religion, or in the Attainment of Happineſs, either in this or in another World; which is the main View of the Holy Scriptures. And accordingly the Variety of Opinions, and the Frequency of Diſputes among thoſe Philoſophers, did but nouriſh this diſputacious Humour of the ſeveral Parties; and this without any Proſpect of the real Diſcovery of Truth, or of reducing Men to a regular and religious Way of Life, in order to their future Happineſs; which for certain ought to be the grand Intention of all our Philoſophical and Religious Enquiries. Let but any one compute the unanimous Agreement of all the Sacred Writers, from *Moſes* to *Polycarp*, in the main Scheme of Divine Revelation, and Conduct of Human Life; with the almoſt entire Diſagreement and Uncertainty there is as to ſuch important Matters among the Heathen Philoſophers; ſo far I mean as thoſe Matters are known to be deriv'd from Revelation; and he will ſoon ſee a vaſt Difference between them; and will not be able to account for it, without allowing the former to be of Supernatural and *Divine*, and the latter of bare *Human Original*.

(XII.) I believe the Truth of the *Jewiſh* and *Chriſtian* Revelations, becauſe the principal Doctrines therein delivered are agreeable to the ancienteſt

ancienteſt Traditions of all other Nations. For, tho', as I have juſt been obſerving, the Heathen Philoſophers among the *Greeks*, who were comparatively later, and more modern, and who followed their own Reaſonings in all ſuch Matters, were mighty uncertain, and various in their Philoſophical and Religious Notions; as all Men are when they have no better guidance than Human Suppoſal and Conjecture; Yet was it quite otherwiſe with the more ancient Ages, and thoſe Natural and Divine Doctrines which they received by Tradition from their firſt Founders, and which moſt probably were originally deriv'd from the firſt Parents of Mankind, or at leaſt from the earlieſt of their Progenitors after the Deluge. Thoſe I mean whoſe Traces and Fragments are ſtill extant in the earlieſt Sacred Books of the *Egyptians*, *Druids*, *Tyrians*, and *Brachmans*, in the Remains of *Trismegiſtus*, of *Orpheus*, and *Zoroaſtres*, &c. and in the *Sibylline* Oracles; thoſe Parts, I mean, of them which are well atteſted to by *Heathen*, *Jewiſh*, and *Chriſtian* Antiquity. Theſe moſt ancient Traditions, as has been largely and fully ſhewn by *Grotius*, Biſhop *Stillingfleet*, and many others, do, for the main, admirably agree with the *Jewiſh* and *Chriſtian* Revelations; not only as to the particular Hiſtories and Facts contained in the *Old Teſtament*, of which already; but as to the principal Points on which thoſe Religions are grounded; I mean, the Unity and Attributes of God; the Creation of the World by him; its Deluge already paſt, and Conflagration ſtill future; the Immortality of Human Souls; and the Judgment to come; with the Rewards and Puniſhments of the next World. This Agreement of the moſt Ancient Heathen

Traditions, and that in ſeveral Parts of the World, with the like Contents of the Sacred Writings of the *Jews* and *Chriſtians*, cannot but be a mighty Atteſtation to them, both as to thoſe particular momentous Points themſelves, and alſo, in a good Degree, to the reſt of their Contents, ſo far as they are any way connected with, or belong to them. Inſomuch that He who is an Infidel, in thoſe fundamental Articles eſpecially, muſt not only oppoſe himſelf to the Inſpired Records of the *Jews* and *Chriſtians*, but alſo to the beſt and oldeſt Remains we have in all others Nations relating to the ſame Doctrines.

(XIII.) I believe the Truth of the *Jewiſh* and *Chriſtian* Records, notwithſtanding the Difficulties thereto relating, becauſe I obſerve that thoſe Difficulties do not affect the Truth of the Facts, or Aſſertions, on which thoſe Religions are grounded, but the Conduct of Providence only; the Reaſons of which Conduct are no Parts of thoſe Religions; and accordingly, the Sacred Writers do never pretend fully to know, or to reveal them to Mankind. This I take to be an Obſervation of great Weight, and yet not ſufficiently taken notice of by any; *viz.* That thoſe Inſpired Writers, who deliver us the moſt important Meſſages and Commands in the Name of God, with the utmoſt Aſſurance; who relate the moſt ſurprizing Miracles, and that as done, or ſeen by themſelves, and many others openly, with the greateſt Boldneſs; who denounce Threatnings, or promiſe Bleſſings, quite beyond their own Ability to make good, with the moſt aſſured Confidence; who reprove Princes and People as to Crimes of the higheſt Nature,

ture, even while they were entirely under their Power, and in their Hands, with the utmost Freedom and Courage; and who in their whole Conduct ever show a perfect satisfaction in the Truth of their Mission, and Certainty of their Inspiration from God; do yet rarely or not at all meddle with the Reasons of Providence, the Justification of the Divine Orders, or the Vindication of the Justice and Goodness of God in such his Dispensations by them. Nay, the rest of the Prophets or Apostles, excepting our Blessed Saviour himself, do generally seem equally puzzled and surpriz'd at several of those Dispensations; and are found as ready to expostulate, tho' generally in a decent and most humble manner, with God, concerning such his strange and surprizing Procedure, as other Men, no way concern'd in any such Divine Dispensations at all. Thus, for Example, we find in the ancientest Book now extant in the whole Bible, and probably in the whole World, I mean the Book of *Job*, the same Difficulties and Disputes about the Conduct of Providence, the Prosperity of the Wicked, and Afflictions of the Righteous, that we every where else meet with in other Authors. And, what is most of all remarkable, we here find, that when God himself is introduc'd, as finally determining those Debates, it is done without the Assignation of the particular Reasons for this Procedure; any farther, than the noble Representation of the Power and Wisdom of the Almighty in general, and the Meanness and Inability of his Creature Man, and the consequent Submission due from the one to the other, may be thought sufficient for that Purpose. Thus we find the *Psalmist* equally sur-

Job xxxviii. xxxix. xl.

Ps. lxxiii.

priz'd at the ſame ſtrange Conduct of Providence, and hardly able to extricate himſelf from the Difficulties therein; even with all the Advantages of the *Moſaick* Religion, and the more conſtant Happineſs of the Good, and Afflictions of the Bad under it, than in any other Nations of the World. Thus alſo we find the Prophet *Jeremiah*; one whom God frequently made uſe of in his Revelations to the *Jewiſh* Nation, and who endured the ſevereſt Impriſonment for his Faithfulneſs to his Duty as a Prophet; was equally ſhock'd and ſurpriz'd at the ſame ſeemingly unequal and partial Conduct of Providence; and complains to God of it; yet without any full or ſatisfactory Anſwer: And the like Obſervations may be made as to *Solomon*, and other of the Inſpired Writers. While yet, theſe their Difficulties and Complaints, never in the leaſt made them doubt or diſpute about the Certainty of their Miſſion and Inſpiration; about the Truth of the Promiſes and Threatnings they denounced from God; or about the Reality of the Miracles that were performed in his Name. Accordingly I obſerve, that *Simon Magus*, with his old Followers among the Hereticks, who allowed the Truth of the Facts and Miracles of the Goſpel, did only make uſe of ſuch Reaſons as were taken from the ſeeming Injuſtice, and Unaccountableneſs of ſeveral Parts of Providence, in order to ſubvert Chriſtianity. Nor is the Caſe much different among our preſent Unbelievers; who being not able to find any good Grounds to overthrow the Truth and Certainty of the Prophetick and Miraculous Atteſtations, which the *Jews* and *Chriſtians* alledge for the

Jer. xii. 1. *&c.*

Eccleſ. paſſim. *See* 4 *Eſd* paſſim.

Recogn. paſſim.

Divinity of their Religion, do commonly proceed after the ſame manner, and muſter up all the Arguments they are able from the like Inſtances of Providence, or Paſſages in Scripture, which ſeem to them abſurd and unreaſonable. Now what is the natural Reſult of all this? But that, as the Scriptures every where allow and ſuppoſe, God's proper Time for unravelling the Myſteries of his Providence, *the Day for the Revelation of his righteous Judgment*, is not yet come; that he has yet during all this Interval, afforded ſufficient Demonſtrations of the Certainty of the *Jewiſh* and *Chriſtian* Revelation's Derivation from him notwithſtanding; which is the proper State of this Matter, and ought to be the proper Meaſures of our own Faith and Practice accordingly. For as the Difficulties are there and only there, where Divine Revelation does not pretend they are yet cleared; ſo is there no certain Difficulties, ſo far as the ſame Revelation pretends to Evidence and Demonſtration, for what it recommends to us; which Caſe methinks highly deſerves the Conſideration of our modern Scepticks and Unbelievers. Rom. ii. 5.

(XIV.) Natural Religion, which is yet ſo certain in it ſelf, is not without ſuch Difficulties, as to the Conduct of Providence, as are objected to Revelation; and therefore none that believe the former, ought to be deterr'd by ſuch Difficulties from believing the latter. This is alſo a ſomewhat uncommon, but certainly not an improper Obſervation, as to the Credibility of Divine Revelation, to all thoſe I mean who are not entirely Atheiſts, or againſt all Divine Providence. Thus we find in the Conduct of

Natural Providence ſome ſuch ſtrange *Phænomena* as are not eaſily accountable, or reconcileable to the moſt becoming Notions we all have of the One, Wiſe, Juſt, and Beneficent Creator and Governor of the Univerſe. We find ſuch Antipathies of even one brute Creature againſt another; ſuch a vaſt Number of thoſe Creatures deſtroy'd immediately upon their Birth; ſuch ſudden and untimely Deaths that frequently happen to many others of them in the Courſe of Things; ſuch a vaſt Number of them devoured by other brute Creatures, by Men, nay, ſometimes by thoſe of their own Species: We find in the State of Mankind, even abſtracted from Revelation, ſo many Miſeries and Calamities every where in the World, involving the ſeveral Individuals from their Birth to their Grave, and thoſe often no way to be avoided or cured by any Methods of Prudence, or Virtue, or Religion it ſelf, as affords great Difficulties to thinking Perſons, and have occaſion'd abundance of Hypotheſes, in order to their Reconciliation with a general Providence: And after all, are in great Meaſure equally difficult to us, as they have been to the paſt Ages of the World. If therefore, theſe great Objections notwithſtanding, the Arguments for Natural Providence do ſtill appear cogent and undeniable, as indeed they now do more than ever; and all wiſe Men rather chuſe to believe what they have full External Evidence for in Natural Religion, although they cannot yet ſolve all the Difficulties therein, why do not we proceed after the ſame Fair and Impartial Manner in the Buſineſs of Revelation? And equally believe thoſe Scriptures, for which we have ſuch ſtrong and cogent Arguments,

although

although we cannot yet ſolve all the Difficulties contained in them? Eſpecially when I may venture to ſay, the Caſe of Divine Revelation, compar'd with Natural Religion, is, as to this Point, not at all to the Diſadvantage of the former; and that the Objections againſt Natural, are not at all Inferior to thoſe againſt Reveal'd Religion; As any Impartial Man will eaſily confeſs upon the Compariſon.

(XV.) I therefore believe the *Jewiſh* and *Chriſtian* Revelations to be true, becauſe the Records of the ſame, or the Books of the Old and New Teſtament, have the greateſt Marks of Honeſty and Impartiality of all others; and withal, have none of thoſe known Marks of Knavery and Impoſture, which all falſe and ſpurious Writings muſt certainly have. Theſe Obſervations ſeem to me highly uſeful, and very certain and obvious, upon a careful Peruſal, and exact Compariſon: But becauſe they are common, and frequently inſiſted on by others, and if enlarg'd upon, would take up too great a Room here, I ſhall chuſe to refer the Reader to thoſe who have already treated of thoſe Subjects; particularly to our excellent Dr. *Prideaux*, in his Appendix to the Life of the Impoſtor *Mahomet*.

Only I beg of the Inquiſitive Reader himſelf to reflect on this Head, as he reads the Sacred Hiſtories, and to conſider with himſelf how very improbable it is that thoſe Sacred Accounts, which of all other Ancient Writings now Extant, have evidently the greateſt internal Marks of Sincerity, and the leaſt imaginable Signs of Falſhood of all others, ſhould yet be the groſſeſt Forgeries, and moſt notorious Impoſtures in the whole World: As upon the Sup-

poſition of their being untrue, they muſt moſt certainly appear to be to all Mankind.

(XVI.) I believe the Truth of the *Jewiſh* and *Chriſtian* Revelations, becauſe the Scripture Predictions have been ſtill fulfilled in the ſeveral Ages of the World whereto they belong. This is an eminent and open Method of trying the Truth, or Falſhood, of any pretended Revelation, which is ſo explicit as to foretel future Events; eſpecially thoſe that are very remote, and depend mainly on the free Actions of Men, or on the Counſels of God, and the State of the Inviſible World; ſuch as the *Jewiſh* and *Chriſtian* Revelations moſt certainly are. And to this Completion do I venture openly to appeal, for the Juſtification of thoſe Inſtitutions. Accordingly, I dare venture to affirm, with St. *Peter*, that this Character of a *more ſure Word of Prophecy*, is one of the ſtrongeſt Arguments for the Truth of the Scriptures, of all other whatſoever. I have already ſhew'd elſewhere, how exactly the Sacred Predictions that belong to Times already paſt, and were extant in the Days of *David*; as alſo not a few of thoſe belonging to Chriſtianity afterward, have been exactly fulfilled in their appointed Times, in my *Sermons at Mr.* Boyle's *Lectures*; in my *Chronology of the Old Teſtament, and Harmony of the four Evangeliſts*, and in my *Eſſay on the Revelation of St.* John. And I declare I am ſo far from ſeeing any Reaſon from the preſent Poſture of Affairs in the World, to doubt of the Completion of thoſe which remain, even for the main, as I have expounded them, that I rather find great Cauſe to believe, that the Prophetick Scheme begins to clear up apace, and that the

2 Pet. i. 19.

Kingdoms

Kingdoms of this World, as is there Predicted, will in no long Time (and this probably, as moved in Part by the Plainneſs of the Completion of ſome of the Sacred Predictions juſt now paſt, or ſoon coming on) *become the Kingdoms of our Lord, and of his Chriſt; and that he ſhall Reign for ever and ever.* But this important Matter has been ſo particularly treated of by me elſewhere, in the Treatiſes already referr'd to, that it is by no means proper to enlarge upon it here any farther; Only, *Whoſo Readeth, let him Underſtand. He that hath Ears to Hear, let him Hear.*

Apoc. xi. 15.

Mat. xxiv. 15. xi. 15.

(XVII.) I am therefore obliged to admit the *Jewiſh* and *Chriſtian* Revelations to be true, and Divine; becauſe no oppoſite Syſtem of the Univerſe, or Scheme of Divine Revelation, has any tolerable Pretences to be true, or can be compar'd, as to Evidence, with thoſe of the *Jews* and *Chriſtians*. Whither would our Atheiſts or Deiſts have us go for Information and Satisfaction, in our moſt concerning Enquiries about the State of the Univerſe, and of Religion, and of our Souls hereafter, if we muſt diſcard the Holy Scriptures? Muſt we go to any other Records, as better atteſted to? This I believe they will not ſay. Muſt we have Recourſe to the exploded and abſurd Schemes of the Eternity of the World, and the Fatality of all Things; or to that greater Abſurdity of the Formation and Diſſolution of the Univerſe by the Fortuitous Concourſe of Atoms? This alſo, I believe they will now not much inſiſt upon. Muſt we then rely on Natural Religion, and the Voice of common Reaſon for our Guidance to Happineſs? This Rule, ſo far as it can go,

is

is entirely allow'd and improv'd by the Scriptures, and does it ſelf naturally lead us farther to Divine Revelation, as the only Security of not erring in many Caſes, eſpecially thoſe of Divine Worſhip, and Propitiation; and the principal Means of diſcovering the Certainty of ſuch future Rewards and Puniſhments, as are in many Caſes abſolutely neceſſary to ſupport the Obſervance of the Laws of Nature. Muſt we, I ſay, take our Leaves of the *Jewiſh* and *Chriſtian* Revelations, which have ſuch Mighty Atteſtations as coming from God, and truſt our ſelves wholly to our own Human, Frail, and Uncertain Imaginations, Inclinations, and Conjectures in Divine Matters? This ſeems very hard, and very unreaſonable. Let us ſuppoſe that the Philoſophy and Religion we now are in Poſſeſſion of, have ſeveral difficult Places, and ſome hitherto unaccountable Phænomena in them: Yet for certain may we juſtly expect to have a better Philoſophy and Religion to betake our ſelves to, before we leave theſe; I mean better atteſted, and freer from Perplexities and Incumbrances, both in Faith and Practice; otherwiſe we ſhall act abſurdly; and imitate the Folly of him who pulls down his preſent Houſe, on Account of ſome apparent Inconveniencies therein, without either the Skill or the Ability to build a better in its Stead. And for my ſelf, I venture to promiſe all the Scepticks and Unbelievers of our Age, that as ſoon as ever they will ſhew me a Scheme of Philoſophy and Religion more Rational, and better Atteſted than that of the *Chriſtian*, which is the Perfection of the *Jewiſh* alſo, I will be their Proſelyte: But till then they muſt excuſe me.

These

Theſe, Reader, are ſome of the Arguments and Motives which induce me really to believe, and conſcienciouſly to endeavour to live up to the *Chriſtian* Inſtitution, and to admit the Holy Scriptures for Divinely Inſpired: And, I heartily wiſh they may have the ſame Influence upon every Reader; that ſo they may *with the Heart believe unto Righteouſneſs, and with the Mouth make Confeſſion unto Salvation.* Rom. x. 10.

One Thing I will add here; that ſince we cannot act upon Motives and Arguments any farther than we can know them; nor can we go upon Evidence any farther than it is extant in the World for our Examination: And ſince the Juſtice of God can only require us to act upon the Motives and Evidence his Providence affords us, and can only call us to an Accoune for our Behaviour in Agreement with ſuch Motives and Evidence; I venture to ſay, with great Aſſurance, that whatever be the Truth of the Things themſelves, which we can no otherwiſe determine about, the Arguments and Evidence now Extant in the World, do, for the main, ſo greatly and undoubtedly *preponderate* on the Side of the *Jewiſh* and *Chriſtian* Revelations, that we are bound by all the Rules of Juſtice, and Reaſon, and good Senſe, to prefer it, to be determin'd by it, and act upon it; and that therefore thoſe who do otherwiſe may juſtly be call'd to Account, and puniſh'd for the contrary Procedure, for their Infidelity and Diſobedience; ſeeing theſe are choſen in Defiance of plainly greater, and plainly *ſuperior Evidence* for the Divine Authority of the Sacred Writings.

I conclude the whole with Two remarkable Paſſages, taken from the Two great Apoſtles St. *Peter* and St. *Paul*, and with the Recommen-

dation of Three Genuine Memorials of the moſt Primitive Martyrs: and I pray God they may equally affect others, as they always do my ſelf, while I conſider them as the Solemn Atteſtations of ſuch Perſons, who moſt of them certainly knew whether the Religion they Preach'd was Divine or not; and as generally made a little before their Deaths alſo; when, if ever, Men uſe to be ſerious, ſincere, and in earneſt in ſuch their Declarations.

2 Pet. 1. 10—18. Perer.] *Wherefore the rather, Brethren, give Diligence to make your Calling and Election ſure: For if ye do theſe Things ye ſhall never fall: For ſo an Entrance ſhall be miniſtred unto you abundantly, into the everlaſting Kingdom of our Lord and Saviour Jeſus Chriſt. Wherefore I will not be negligent to put you always in Remembrance of theſe Things, though ye know them, and be eſtabliſhed in the preſent Truth. Yea, I think it meet, as long as I am in this Tabernacle, to ſtir you up, by putting you in Remembrance: Knowing that ſhortly I muſt put off this my Tabernacle, even as our Lord Jeſus Chriſt hath ſhewed me. Moreover, I will endeavour that you may be able after my Deceaſe to have theſe Things always in Remembrance. For we have not followed cunningly deviſed Fables, when we made known unto you the Power and Coming of our Lord Jeſus Chriſt, but were Eye-Witneſſes of his Majeſty. For he received from God the Father, Honour and Glory, when there came ſuch a Voice to him from the excellent Glory, This is my beloved Son, in whom I am well pleaſed. And this Voice which came from Heaven we heard, when we were with him in the Holy Mount.* [*See* Matt. xvii. 1--13.] Paul.]

Paul.] *I charge thee therefore* [Timothy] *before God, and the Lord Jeſus Chriſt, who ſhall judge the Quick and the Dead, at his appearing and his Kingdom: Preach the Word, be inſtant in Seaſon, out of Seaſon; reprove, rebuke, exhort with all Long-ſuffering and Doctrine.* 2 Tim. iv. 1, 2.

But watch thou in all things, endure Afflictions, do the Work of an Evangeliſt, make full Proof of thy Miniſtry. For I am now ready to be offered, and the time of my departure is at hand. I have fought a good Fight, I have finiſhed my Courſe, I have kept the Faith. Henceforth there is laid up for me a Crown of Righteouſneſs, which the Lord the righteous Judge ſhall give me at that Day: And not to me only, but unto all them alſo that love his appearing. v. 5—8.

The Genuine Memorials of the Martyrs which I would here recommend, (and they are almoſt all the Memorials of that Kind, which appear to be very Ancient and certainly Genuine) are, the Epiſtle of St. *Ignatius*, Biſhop of *Antioch*, to the *Romans*, as he was going to Martyrdom: The Epiſtle of the Church of *Smyrna*, concerning the Martyrdom of St. *Polycarp* their Biſhop: And the Epiſtle of the Churches of *Vienna* and *Lyons*, concerning the Martyrs under the Perſecution of *Verus* in *Euſebius*: All which, if they do not in ſome meaſure Affect Men, and make them ſenſible, that the firſt Chriſtians, even thoſe who certainly knew whether Chriſtianity was true or not, were in earneſt, and believed themſelves, their Hearts are *as hard as the nether Milſtone*, and paſt all ordinary Ways of Influence and Conviction. Hiſt. Eccl. V. 1.

Lyndon in *Rutland.*
Sept. 1. 1716.

WILL. WHISTON.

Sir

Sir *Richard Blackmore's* HYMN TO THE CREATOR.

HAil King Supream! of Pow'r Immenſe Abyſs!
Father of Light! Exhauſtleſs Source of Bliſs!
Thou Uncreated, Self-exiſtent Cauſe,
Controul'd by no Superior Being's Laws;
E'er Infant Light eſſay'd to dart the Ray,
Smil'd heav'nly ſweet, and try'd to kindle Day;
E'er the wide Fields of Ether were diſplay'd,
Or Silver Stars Cerulean Spheres inlaid;
E'er yet the eldeſt Child of Time was Born,
Or verdant Pride young Nature did adorn,
Thou Art; and didſt Eternity employ
In unmoleſted Peace, in Plenitude of Joy.

In its Ideal Frame the World deſign'd
From Ages paſt lay finiſh'd in Thy Mind.
Conform to this Divine Imagin'd Plan,
With perfect Art th' amazing Work began.
Thy Glance ſurvey'd the Solitary Plains,
Where ſhapeleſs Shade inert and ſilent Reigns;
Then in the dark and undiſtinguiſh'd Space,
Unfruitful, unincloſ'd, and wild of Face,
Thy Compaſs for the World did mark the Place.
Then didſt Thou through the Fields of barren Night
Go forth collected in Creating Might.
Where Thou Almighty Vigour didſt exert,
Which Emicant did This and That Way dart

Thro'

Thro' the black Bosom of the empty Space:
The Gulphs confess th' Omnipotent Embrace,
And pregnant grown with Elemental Seed
Unfinish'd Orbs, and Worlds in Embryo breed.
From the crude Mass, Omniscient Architect,
Thou for each Part Materials didst select,
And with a Master-hand Thy World erect.
Labour'd by Thee, the Globe's vast lucid Buoys
By Thee uplifted float in liquid Skies.
By Thy cementing Words their Parts cohere,
And roll by Thy Impulsive Nod in Air.
Thou in the Vacant didst the Earth suspend,
Advance the Mountains, and the Vales extend;
People the Plains with Flocks, with Beasts the Wood,
And store with Scaly Colonies the Flood.

Next Man arose at Thy Creating Word,
Of Thy Terrestrial Realms Vicegerent Lord.
His Soul more artful Labour, more refin'd,
And Emulous of bright Seraphic Mind,
Ennobled by Thy Image spotless shone,
Prais'd Thee her Author, and ador'd Thy Throne:
Able to Know, Admire, Enjoy her God,
She did her high Felicity applaud.

Since Thou didst all the spacious Worlds display,
Homage to Thee let all Obedient pay.
Let glitt'ring Stars, that Dance their destin'd Ring
Sublime in Sky, with Vocal Planets Sing
Confed'rate Praise to Thee, O Great Creator King.
Let the thin Districts of the waving Air,
Conveyancers of Sound, Thy Skill declare.
Let Winds, the Breathing Creatures of the Skies,
Call in each vig'rous Gale, that roving flies
By Land or Sea, then one loud Triumph raise,
And all their Blasts employ in Songs of Praise.

While painted Herald-Birds Thy Deeds proclaim,
And on their spreading Wings convey Thy Fame;
Let Eagles, which in Heav'n's Blue Concave soar,
Scornful of Earth superior Seats explore,

And

And riſe with Breaſts erect againſt the Sun,
Be Miniſters to bear Thy bright Renown,
And carry ardent Praiſes to Thy Throne.

Ye Fiſh aſſume a Voice, with Praiſes fill
The hollow Rock, and loud reactive Hill.
Let Lions with their Roar their Thanks expreſs,
With Acclamations ſhake the Wilderneſs.
Let Thunder-Clouds, that float from Pole to Pole,
With Salvoes loud ſalute Thee, as they roll.
Ye Monſters of the Sea, ye noiſy Waves
Strike with Applauſe the repercuſſive Caves.
Let Hail and Rain, let Meteors form'd of Fire,
And lambent Flames, in this bleſt Work conſpire.

Let the High Cedar, and the Mountain Pine
Lowly to Thee, Great King, their Heads incline.
Let ev'ry Spicy Odoriferous Tree
Preſent its Incenſe, and its Balm to Thee.

And Thou, Heav'n's Viceroy o'er this World below,
In this bleſt Task Superior Ardor ſhow:
To view thy Self inflect thy Reaſon's Ray.
Tranſported, Nature's Theatre ſurvey.
Then all on Fire the Author's Skill adore,
And in loud Songs extol Creating Pow'r.

Degenerate Minds in mazy Error loſt
May combat Heav'n, and impious Triumphs boaſt;
But while my Veins feel animating Fires,
And vital Air my breathing Breaſt inſpires,
Grateful to Heav'n I'll ſtretch a pious Wing,
And Sing His Praiſe, who gave me Pow'r to Sing.
Creation, Lib. VII. in calce.

FINIS.

ERRATA.

PAge 51. Line 15. read 130,000. l. 16. r. 364,000. p. 54. l. ult. r. 4248. p. 57. l. 6. r. *as to.* l. 16. r. 231. l. 19. r. *near* 3. l. 22. r. 12. p. 59. Marg. add p. 426, —430. p. 109. l. 28. add in the Marg. *De Univerſo*, C. 1. p. 255. l. 22. r. *it is this.*

THE CAUSE OF THE DELUGE DEMONSTRATED.

BEFORE I proceed to my preſent *Demonſtration of the Cauſe of the Deluge*, I muſt premiſe this, That in my *New Theory of the Earth*, eſpecially as improv'd and corrected in the Second Edition, I have evidently ſhewn, that in Caſe a Comet paſs'd by, before the Earth, in its annual Courſe, on the 17th Day of the Second Month, from the Autumnal Equinox, or *Nov.* 28. in the 2349th Year before the Chriſtian Æra, the Phænomena of Nature and Hiſtory, and particularly the *Moſaick* Account of the Deluge of *Noah*, which are no otherwiſe to be accounted for, are exactly explain'd; that the Calculations and Proportions, where-ever we can come at them, are on that Hypotheſis right, agreeable to one another, to Ancient, eſpecially Sacred Hiſtory, and to the Syſtem of Aſtronomy; that there are Traces in Ancient Books of a Tradition, that a Comet did appear at the very Beginning of the Deluge; that the very Month and Day mentioned by *Moſes* for ſuch its Beginning, is atteſted to by other Old Records, and, on this Hypotheſis, by Aſtronomical Calculations alſo: whence I concluded that it was

moſt highly probable, or rather phyſically demonſtrable, that a Comet did paſs by at that time, and was, under the Conduct of the Divine Providence, and as his Inſtrument in puniſhing a wicked World, the Cauſe of that Deluge. The only thing wanting was, to demonſtrate from the Period of ſome Comet, and its Situation in the Heavens, Aſtronomically ſtated and computed, that ſuch a Comet did actually come by at that very time: which if it could be once ſhewn, the whole muſt be own'd as certain, and demonſtrated, and all the natural Corollaries therefrom muſt be allow'd as true, even by the Obſtinate and Incredulous. This indeed at firſt was look'd upon by me as not at all to be expected; ſince we then barely began to know, or rather ſtrongly to conjecture that Comets did revolve about the Sun in ſettled Periods, but without being able to determine any one of thoſe Periods. But of late God has ſo bleſs'd the Labours of the Learned; and this Part of Aſtronomy is ſo much improv'd, eſpecially by the farther Pains and Obſervations of the great Inventor himſelf, Sir *Iſaac Newton*; whoſe Name will never be forgotten while Mathematicks and Aſtronomy are preſerv'd among Mankind; and by the laborious Calculations of the acute Dr. *Halley*, on the Principles laid down by the former, that what was a few Years ago almoſt deſpair'd of, is now in great Meaſure diſcover'd, and we know not only that one Comet has come round three or four times already in later Ages, *viz.* A. D. 1456, 1531, 1607, and 1682, and will no doubt come round again *A. D.* 1758, as making its Period in about 75 Years; that another has probably come round in the ſame later Ages twice already, *viz. A. D.* 1532, and 1661; and ſo is to return *A. D.* 1789, or 1790, as making its Period in about 129 Years; But, which is the greateſt Diſcovery of all, that the laſt moſt remarkable Comet

met, whoſe Deſcent into our Regions has occaſion'd almoſt all the modern ſolid Knowledge we have relating to the whole Cometick Syſtem it ſelf, has alſo ſeveral times been ſeen already within the time of certain Records; I mean in the 44th Year before Chriſt, and again *A. D.* 531, or 532; and yet again *A. D.* 1106, beſides this its laſt Appearance *A. D.* 1680, whereby we know that it revolves in about 575 Years. This laſt Comet I may well call the *moſt remarkable one* that ever appear'd; ſince beſides the former Conſideration, I ſhall preſently ſhew, that it is no other than that very Comet which came by the Earth at the Beginning of *Noah*'s Deluge, and which was the Cauſe of the ſame. Now conſidering the Premiſes, I ſhall only have occaſion, in order to my preſent Deſign, to prove theſe five Things concerning it. (1.) That no other of the known Comets could paſs by the Earth at the Beginning of the Deluge. (2.) That this Comet was of the ſame Bigneſs with that which paſs'd by at that time. (3.) That its Orbit was then in a due Poſition to paſs by at that Time. (4.) That its deſcending Node was then alſo in a due Poſition for the ſame Paſſage by. (5.) That its Period exactly agrees to the ſame time. Or, in ſhort, that all the known Circumſtances of this Comet do correſpond, and that it actually paſs'd by on or about that very Year, and on or about that very Day of the Year when the Deluge began. All which Things I ſhall demonſtrate in their Order.

I. None of the other Comets yet known, I mean of the 21 in Dr. *Halley*'s Table and my *Solar Syſtem*, could be that which paſs'd by the Earth at the Beginning of the Deluge. This appears by theſe certain Arguments following.

(1.) None of them appear to have been of a due Bigneſs; For the Phænomena of the Deluge, as I

New Theor. 2d Edit. *Corol.* 2. *Lem.* 86. & *p.* 303, 304.

have elſewhere ſhew'd, require a ſmall one in Compariſon of the Earth, whereas the reſt of the Comets ſeem to have been commonly larger than it.

(2.) None of their deſcending Orbits are duly ſituate, I mean between 90 and 100 Degrees from *Aries*: which Poſition is yet abſolutely neceſſary in this Caſe. For the Preceſſion of the Equinox, which is about 50 Degrees, added to the 46 Degrees that the Earth was diſtant from *Aries* when the Flood began, muſt ſuppoſe the deſcending Orbit of the Comet to be now between 90 and 100 Degrees from *Aries*: at which place none of the deſcending Orbits of the other Comets are now ſituate; as Dr. *Halley*'s Table, and my Solar Syſtem grounded thereon, will readily ſhew. (3.) None of the other's Nodes are ſo ſituate, as is neceſſary to bring the Comet near enough to our Earth: I mean between 90 or 100 Degrees from *Aries*; and ſo as to croſs the Plane of the Ecliptick very near to the Diſtance of the Earth from the Sun; as is alſo plain from the ſame Table and Syſtem. Nay indeed, the wrong Situation of the deſcending Orbits, noted under the laſt Head, renders this due Situation of the Nodes plainly impoſſible. For it being neceſſary, that the Orbit it ſelf interſect the Ecliptick it ſelf in the 17th Degree of *Taurus*; this cannot poſſibly be in ſuch a Situation of the Orbit, as that we have already mention'd to belong to all the reſt of the known Comets. So that theſe other Comets were utterly incapable of being inſtrumental in the Deluge, even tho' their Periods ſhould any of them agree; which yet we know not that any of them do.

Ubi ſupra.

II. This Comet was of the ſame Bigneſs with that which paſs'd by at that time; I mean a very ſmall one, and only 10 times as large as the Moon. This appears by Mr. *Flamſteed*'s Determination of its apparent Diameter, about 29″ when it was near-

ly

ly as far off as the Sun: whereas he ſuppoſes that of the Moon at the ſame Diſtance to be about 6″. So that if due Allowance be made for that large and denſe Part of the Atmoſphere, which hides the Nucleus or Comet it ſelf from us, ſuppoſe 7″, the Diameter of the ſolid Body it ſelf will be only 13″. Now the Cube of 13, or 2197, is to the Cube of 6, or 216, as about 10 to 1. Whence it appears, that this Comet is about ten times ſo great as the Moon, or $\frac{1}{4}$ ſo great as the Earth, as the real Comet that occaſion'd the Deluge ought to be.

III. The deſcending Part of the Orbit of this Comet was about the 17th deg. of *Taurus* at the Time of the Deluge, as that of the Comet at the Deluge muſt have been. For this deſcending Orbit is now in the 2d Degree of *Cancer*; and if we allow 46 Degrees for its apparent Motion ſince the Deluge, which is very little different from the real Preceſſion of the Equinox, the main, if not only Occaſion of it, it will appear to have been in the 17th Degree of *Taurus* at that Time, according to the foregoing Computation.

IV. The Deſcending Node of this Comet, which is of the greateſt Conſideration here, and liable to the greateſt Variety of all, does alſo exceeding well agree in the preſent Caſe. For this is now in the 3d Degree of *Cancer*; and if we allow, as before, 46 Degrees for its apparent Motion ſince the Deluge, or for the real Preceſſion of the Equinox, the main, if not only Cauſe of it, it will appear to have been in the 17th of *Taurus* at that Time alſo. Nay, if we allow the leaſt Inequality in theſe two Motions, or the leaſt Alteration of the Planes either of the Ecliptick or of the Comets Orbit, or of both, as we juſtly may, both from the Phyſical Cauſes, and Aſtronomical Obſervations, we may ſuppoſe them ſtill nearer the Earth's Diſtance from the Sun, and ſo more exactly ſuitable to the Caſe of the Deluge.

V. The Period of this Comet moſt exactly agrees to the ſame Time, I mean to 7 Revolutions in 4028 Years, the Interval from the Deluge till its laſt Appearance 1680. For, as Sir *Iſaac Newton* firſt obſerv'd, from its Elliptick Curvature before it diſappear'd, that its Period muſt be in general above 500 Years; ſo has He and Dr. *Halley* ſince obſerv'd, that the ſame Comet has been ſeen four times, *viz.* the 44th Year before Chriſt. *A. D.* 531 or 532, *A. D.* 1106, and *A. D.* 1680, and that by conſequence it makes a Revolution in about 575 Years. Now if we make a very ſmall Allowance for the old Periods before Chriſt, and ſuppoſe that, one with another, it has revolv'd in 575½ Years, we ſhall find that 7 ſuch Periods amount to 4028 Years, exactly, according to that Number ſince the Deluge. This is ſo remarkable an Obſervation, and ſo ſurprizing, that it will deſerve a particular Demonſtration from the original Authors themſelves. To begin then with the firſt of the Appearances recorded in later Hiſtory, I mean that in the 44th Year before Chriſt, the Year that *Julius Cæſar* was ſlain, we have no fewer nor leſſer Perſons than *Seneca*, *Suetonius*, *Plutarch* and *Pliny* to atteſt it; and the laſt, as bringing *Auguſtus*'s own Words for his Voucher. Take the Account in thoſe Words, as being the moſt authentick and remarkable. 'On thoſe very Days, ſays *Auguſtus*, when 'I was exhibiting ſome Games to the People, [be-'gun about *Sept.* 26.] a Comet appear'd for 7 Days, 'and was ſeen in the *Northern* Part of Heaven. It 'roſe about the 11th Hour of the Day: It was a 'remarkable one, and viſible all over the World. 'The common People believ'd, that it ſignify'd the 'Reception of the Soul of *Cæſar* into the Number 'of the Immortal Gods. On which Account the 'Image of this Star was added to that Statue repre-'ſenting *Cæſar*'s Head, which we a while after con-'ſecra-

Princip. 2d Edit. p. 465.

Sen. Nat. Quæſt. L. VII. C. 17. *Sueton. in Jul.* C. 88. *Plut. in Cæſar. Plin. Hiſt. Nat.* L. II. C. 24. *Grut. ap. Uſſer. Annal.*

ſecrated in the Forum". Accordingly it is known that ſome of *Cæſar's* Coins have a Star upon them, for a Memorial of this Comet; and obſervable that *Virgil* hints at the ſame alſo, *Patrium aperitur vertice ſidus.* *Plutarch's*, *Seneca's* and *Suetonius's* Words are almoſt the very ſame that are included in the Paſſage from *Auguſtus*, and ſo need not be diſtinctly ſet down. Only the Time of its Riſing is by *Suetonius* ſet down *about the 11th Hour*, without the Words *of the Day*, which the other two have; and its *Northern* Poſition is only mentioned by *Auguſtus* himſelf. Now if we interpret the 11th Hour, or 11th Hour of the Day, to be either 11 a-clock before Noon, or an Hour before Sun-ſet, this will render the whole almoſt incredible: it being next to impoſſible, that this Comet ſhould be ſeen in the Day-time. But the *Romans* then accounting Midnight the Beginning of their Day, as is well known by Chronologers, we may reckon this 11th Hour to be 11 at Night, and all will agree to the Comet before us; and it will ſhew, that as it had been conceal'd by cloudy Weather for ſome time, ſo it now appear'd aſcending from the Sun, with its long and ſplendid Tail for a Week, before the like cloudy Weather, or the Comet's too great Remoteneſs rendred it no longer obſervable. Accordingly the *Northern* Poſition of this Comet, noted here by *Auguſtus*, ſecures us ſtill farther, that it muſt have been the ſame with that *A.D.* 1680, which is ever in the ſame Poſition, at the ſame Place of its Orbit: to ſay nothing of its remarkable Brightneſs, which I take to belong to its Tail, and which rendred it ſo very remarkable then in the World: In which Point it as well or better agrees with this, than with any other in the whole Cometary Syſtem. So that on all theſe Accounts, the Comet ſeen then by the *Romans*, and that ſeen *A. D.* 1680, muſt have been one and the ſame Comet. The next Period

Æneid. VIII.

when

when this Comet might be ſeen again, according to the foregoing Time of its Revolution, was *A.D.* 531, or 532. When yet we hear nothing of it in *Hevelius*'s Hiſtory of Comets. But then we have it in *Lubienietz*'s more exact Catalogue, out of *Zonaras*, the Original Hiſtorian, whoſe Words are theſe, Annal. L. xiv. p. 61. 'In the 5th Year of the Emperor *Juſtinian* [*A. D.* 531, or 532.] a Comet appear'd, of that Sort which is called *Lampadias*, 'It ſent its bright Tail upward, and continued to 'ſhine 20 Days. Which Words exactly agree to this Comet. The next Period when it was to be expected, was *A.D.* 1106. at which Time the Hiſtorians are full of their Accounts of it. Take thoſe Accounts in their own Words, as they ſtand in *Hevelius* and *Lubienietz*, who have given us a moſt compleat Collection of them in their Hiſtories of Comets.

Lavath. ex Urſperg. p. 148. *A. D.* 1106. We ſaw a Comet of wonderful Brightneſs, from the firſt Week in *Lent*, until the Paſſion of our Lord. An extraordinary Star was ſeen to ſhine this Year on *Friday* in the Evening, *Southward* and *Weſtward*, and appeared bright for 25 Days together, and always at the ſame Hour.

Lavath. ex Chron. Norimb. vel aliunde.

Calviſ. ex Tyr. *A. D.* 1106. in the Month of *February*, two Days after the New Moon, a great Comet appear'd *South-Weſtward*.

Myrald. p. 140. *A. D.* 1106. a Comet appear'd like a Fire, almoſt all the Month of *February*.

Sigebert. A very great Comet was ſeen in the Time of *Lent*. *Prætorius* adds, that the Emperor *Henry* IV. died the ſame Year; which *Calviſius* alſo agrees to.

Func.

Append. Marian. Scoti. *A. D.* 1106. a Star, which we call a Comet, appear'd.

Exſtorm. ex Chron. Saxon. *A. D.* 1106. a dreadful Comet appear'd, from the firſt Week in *Lent*, till the Vigil of *Palm-Sunday*. The ſame Year the Emperor *Henry* IV. died.

Hiſt. Eccl. ex Simeone Dunelmen. On the Year of our Lord 1106, the 14th of the Calends of *March*, [*Feb.* 16.] a certain ſtrange Star was

was diſcovered, and was ſeen to ſhine between the *South* and *Weſt* for 25 Days, after the ſame manner, and at the ſame Hour. It ſeemed to be ſmall and obſcure; but that Light which went out from it was exceeding bright, and a Splendor, like a great Beam, proceeded from the *Eaſt* and *North*, and ſhot it ſelf upon the ſame Star.

In theſe Teſtimonies, we may ſee that all the Circumſtances of this Comet agree to that of *A. D.* 1680. I mean the Smallneſs and Obſcurity of its Nucleus, the Brightneſs and Remarkableneſs of its Tail, its Poſition *South-Weſt*, and the Direction of its Tail *North-Eaſt*. So that there is no Reaſon to doubt, but it was the very ſame. Only we muſt here note, that theſe two Periods were, one with another, three Quarters of a Year ſhorter than the laſt Period. For from *September*, in the 44th Year before Chriſt, till *February* or *March* *A. D.* 1106. are but 1148¾ Years, or two Periods of 574¼ a piece, one with another: whereas from the ſame *February* or *March* A. D. 1106. till *February* or *March* 1680, when this Comet was about the ſame Poſition again, there are juſt 575 Years. It is rather a Wonder, that the three laſt Periods of our Famous Comet are ſo very nearly equal, than that there is this ſmall Inequality among them. Nor is it, by the way, any Wonder therefore, that the four firſt Periods after the Deluge are to be ſuppos'd one with another rather above 576 Years to agree exactly to that Time. 'Tis rather a Queſtion whether the reſt of the Comets Periods will prove any of them near ſo equal in Proportion, as even that Allowance makes theſe to be. Accordingly, Sir *Iſaac Newton* and Dr. *Halley* rightly obſerve, that theſe Cometary Orbits are the moſt eaſily and ſenſibly diſturb'd by the occaſional Nearneſs of their Comets to other Bodies of all others; and ſo con-

Princip. p. 480. *Prælect. Phyſico. Math.* p. 358, 359.

conſiderable Inequalities are to be expected among them.

Note, (1.) That it is highly remarkable, that this is the only Comet yet known, whoſe Node renders it capable of approaching very near the Body of the Earth; and that the ſame Node is ſtill ſo little remote from the Earth's Orbit, as Dr. *Halley* well obſerves, that it brought this Comet about as near to the ſame as the Moon this very laſt time. Hear his remarkable Words, and conſider the Conſequence of them in this Matter. *Synopſ. Comet. in calce.* 'No Comet, 'ſays he, has hitherto threatned the Earth with a 'nearer Appulſe than that of 1680. For by Cal-'culation, I find that *November* 11th 1h 6' after 'Noon, that Comet was not above a Semidiame-'ter of the Sun, (which I take to be equal to the 'Diſtance of the Moon) to the *Northwards* of the 'Way of the Earth. At which time, had the 'Earth been there, the Comet would, I think, 'have had a Parallax equal to that of the Moon'. Nor can I paſs over his following Words without ſetting them down, they are ſo appoſite to my preſent Purpoſe. 'The former Obſervations, ſays 'he, are to be ſuppos'd as ſpoken to Aſtronomers. 'But what might be the Conſequences of ſo near 'an Appulſe, or of a Contact, or laſtly of a Col-'liſion of theſe celeſtial Bodies, (which are none 'of them impoſſible) I leave to be diſcuſs'd by 'the Philoſophers.

(2.) Since this Comet's Period is 575 Years, its midde Diſtance, muſt be about 5,600,000,000 Miles from the Sun; its longer Axis and greateſt Diſtance twice ſo long, or nearly 11,200,000,000 Miles; its Aphelion Diſtance about 14 times as great as the Diſtance of *Saturn*; its greateſt Diſtance to its leaſt, as above 20,000 to 1; and ſo its greateſt Light and Heat to its leaſt, as above 400,000,000 to 1. (3.) Since

(3.) Since 575 Years appears to be the Period of the Comet that caus'd the Deluge, what a Learned Friend of mine, who was the Occaſion of my Examination of this Matter, ſuggeſts, will deſerve to be conſidered, *viz.* Whether the Story of the Phœnix, that celebrated Emblem of the Reſurrection in Chriſtian Antiquity; [that it returns once after 5 Centuries, and goes to the Altar and City of the Sun, and is there burnt; and another ariſes out of its Aſhes, and carries away the Remains of the former, *&c.*] be not an Allegorical Repreſentation of this Comet; [which returns once after 5 Centuries, and goes down to the Sun, and is there vehemently heated, and its outward Regions diſſolv'd; yet that it flies off again, and carries away what remains after that terrible burning, *&c.*] and whether the Conflagration and Renovation of things, which ſome ſuch Comet in its Aſcent from the Sun may bring upon the Earth, be not hereby prefigur'd. I will not here be poſitive; but I own that I don't know of any Solution of this famous Piece of *Egyptian* Mythology and Hieroglyphicks, as this ſeems to be, that can be compared with it.

Note, (4.) That none of thoſe Comets whoſe Orbits are yet known, can come near enough to our Earth in their Aſcent from the Sun to cauſe the Conflagration. This is evident to thoſe who conſider Dr. *Halley*'s Table, or my Solar Syſtem built upon it; ſince none of them move in or very near the Plane of the Ecliptick; and thoſe four which have their Nodes neareſt the Earth's Orbit, and ſo might approach neareſt to the Earth, are either ſuch as have theſe Nodes ſo near only in their Deſcent to the Sun; as that in 1472, and that in 1618, and that in 1680; or go not any time much nearer to the Sun than the Earth it ſelf, as that in 1684. and ſo are on all Accounts utterly incapable of affording

fording Heat enough for ſuch a Conflagration.

Note (5.) That therefore the Period or Time for that Conflagration, upon the Suppoſition that it is to be cauſed by a Comet, cannot now be diſcover'd by any natural Means; but muſt ſtill remain, as formerly, only knowable from Divine Revelation.

New Theory, p. 450, -453.

Note (6.) That hence thoſe remarkable Corollaries, drawn from the accurate Solution of ſuch Difficulties now, as formerly were plainly inſoluble; I mean, the great Regard due to the Ancienteſt Sacred and Prophane Records, and to the inſpired Method whence they muſt have been deriv'd; the Imperfection of Human Knowledge; the Folly of rejecting Revealed Truths, out of regard to uncertain Human Reaſonnings; the Wiſdom of adhering to the moſt obvious Senſe of Scripture; the Reaſonableneſs of believing Scripture-Accounts and Scripture-Myſteries, tho' not fully comprehended by us; the Juſtneſs of expecting Satisfaction in moral Difficulties in due time from the like Satisfaction afforded already in thoſe that are Philoſophical, and the like, do all receive a new and ſurprizing Confirmation; and will therefore deſerve a new and ſerious Conſideration.

N. B. *Dr.* Halley *having himſelf given an Account of this Comet lately in Dr.* Gregory's *Engliſh* Aſtronomy, *P.* 901, 902, 903, *I here preſent it to the Reader* verbatim, *that he may compare the two Accounts together, for his more entire Satisfaction.*

" But as far as Probability from the Equality " of Periods, and ſimilar Appearance of Comets, " may be urged as an Argument, the late wonderous Comet of 168$\frac{9}{1}$, ſeems to have been the " ſame, which was ſeen in the Time of our King " *Henry* I. *Anno* 1106, which began to appear in " the

" the *Weſt* about the middle of *February*, and con-
" tinued for many Days after, with ſuch a Tail as
" was ſeen in that of 168$\frac{8}{7}$. And again in the Con-
" ſulate of *Lampadius* and *Oreſtes*, about the Year
" of Chriſt 531, ſuch another Comet appeared
" in the *Weſt*, of which *Malela*, perhaps an Eye-
" witneſs, relates that it was μέγας καὶ φοβερὸς, *a great*
" *and fearful Star*; that it appeared in the *Weſt*, and
" emitted upwards from it a long white Beam;
" and was ſeen for 20 Days. It were to be wiſh'd
" the Hiſtorian had told us what Time of the Year
" it was ſeen; but 'tis however plain, that the
" Interval between this and that of 1106, is near-
" ly equal to that between 1106 and 168$\frac{8}{7}$, *viz.*
" about 575 Years. And if we reckon backward
" ſuch another Period, we ſhall come to the
" 44th Year before *Chriſt*, in which *Julius Cæſar*
" was murder'd, and in which there appear'd a
" very remarkable Comet, mentioned by almoſt
" all the Hiſtorians of thoſe Times, and by *Pliny*
" in his Natural Hiſtory, *lib.* 11. *c.* 24. who recites
" the Words of *Auguſtus Cæſar* on this Occaſion,
" which lead us to the very Time of its Appear-
" ance, and its Situation in the Heavens. Theſe
" Words being very much to our purpoſe, it may
" not be amiſs to recite them. *In ipſis Ludorum me-*
" *orum diebus, ſydus crinitum per ſeptem dies, in regione*
" *Cœli quæ ſub Septentrionibus eſt conſpectum. Id orieba-*
" *tur circa undecimam horam diei, clarumq; & omnibus*
" *terris conſpicuum fuit.* Now theſe *Ludi* were de-
" dicated *Veneri genetrici*, (for from *Venus* the *Cæ-*
" *ſars* would be thought to be deſcended,) and be-
" gan with the Birth-day of *Auguſtus*, viz. *Sept.* 23.
" (as may be collected from a Fragment of an
" Old *Roman* Calendar extant in *Gruter*, pag. 135.)
" and continued for 7 Days, during which the Co-
" met appeared. Nor are we to ſuppoſe that it was

" ſeen